

Report No. CG-D-20-96, IV

**Research Methods to Develop Measures of Effectiveness  
of the United States Coast Guard's  
Vessel Inspection and Boarding Program**

**APPENDICES - VOLUME IV**

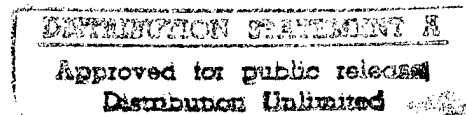
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FINAL REPORT  
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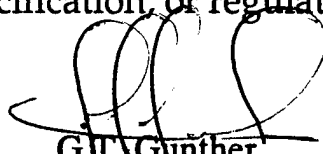
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# Technical Report Documentation Page

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16. Abstract  This report describes a methodology for determining the effectiveness of the U.S. Coast Guard Marine Inspection and Boarding Program for deep draft vessels. Measures of Effectiveness (MOEs) were developed at the overall program-wide, major activity, and sub-activity levels.  Econometric analysis was performed on the relationship between the number of personnel and pollution casualties and the resource hours expended by the Inspection and Boarding programs. The estimates provide MOEs by 1) quantifying the decrease in expected number of casualties, and 2) quantifying the increase in the duration in days to a casualty that results from an increase in resource hours. A second methodology called Risk Based Ranking (RBR) was used to enumerate the contribution of factors targeted by sub-activities as being key contributors to the occurrence of casualties.  For U.S. vessels the results indicate that resources expended are effective in reducing expected number of deaths, injuries, and pollution incidents. For foreign vessels the results are not robust and do not allow clear inferences. The RBR showed that the dominant contributors to maritime risk are linked to Drills/Human Factors, Steering/Navigation, and Cargo/Pollution Control sub-activity intervention strategies. The order of these factors varies by vessel service and country of registry.  A prototype decision support system was developed that displays the econometric models graphically. This report is issued in four separate volumes: Volume I - Executive Summary; Volume II - Main Report; Volume III - Decision Support for Utilizing Measures of Effectiveness; Volume IV - Appendices.					
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# METRIC CONVERSION FACTORS

Approximate Conversions to Metric Measures				Approximate Conversions from Metric Measures			
Symbol	When You Know	Multiply By	To Find	Symbol	When You Know	Multiply By	To Find
LENGTH				LENGTH			
in	inches	* 2.5	centimeters	mm	millimeters	0.04	inches
ft	feet	30	centimeters	cm	centimeters	0.4	inches
yd	yards	0.9	meters	m	meters	3.3	feet
mi	miles	1.6	kilometers	km	kilometers	1.1	yards
AREA				AREA			
in <sup>2</sup>	square inches	6.5	square centimeters	cm <sup>2</sup>	square centimeters	0.16	square inches
ft <sup>2</sup>	square feet	0.09	square meters	m <sup>2</sup>	square meters	1.2	square yards
yd <sup>2</sup>	square yards	0.8	square meters	km <sup>2</sup>	square kilometers	0.4	square miles
mi <sup>2</sup>	square miles	2.6	square kilometers	ha	hectares (10,000 m <sup>2</sup> )	2.5	acres
MASS (WEIGHT)				MASS (WEIGHT)			
oz	ounces	28	grams	g	grams	0.035	ounces
lb	pounds	0.45	kilograms	kg	kilograms	2.2	pounds
	short tons (2000 lb)	0.9	tonnes	t	tonnes (1000 kg)	1.1	short tons
VOLUME				VOLUME			
tsp	teaspoons	5	milliliters	ml	milliliters	0.03	fluid ounces
tbsp	tablespoons	15	milliliters	l	liters	0.125	cups
fl oz	fluid ounces	30	milliliters	l	liters	2.1	pints
c	cups	0.24	liters	l	liters	1.06	quarts
pt	pints	0.47	liters	l	liters	0.26	gallons
qt	quarts	0.95	liters	m <sup>3</sup>	cubic meters	35	cubic feet
gal	gallons	3.8	liters	m <sup>3</sup>	cubic meters	1.3	cubic yards
ft <sup>3</sup>	cubic feet	0.03	cubic meters				
yd <sup>3</sup>	cubic yards	0.76	cubic meters				
TEMPERATURE (EXACT)				TEMPERATURE (EXACT)			
°F	Fahrenheit temperature	5/9 (after subtracting 32)	Celsius temperature	°C	Celsius temperature	9/5 (then add 32)	Fahrenheit temperature

\* 1 in = 2.54 (exactly).



## Appendix A US Flag and Foreign Flag MSO Risk-Based Ranking Results

Section A.1 contains the results for U.S. Flag district level RBRs, Section A.2 contains the results for foreign flag district level RBRs, Section A.3 contains the results for the U.S. flag MSO RBRs, and Section A.4 contains the results for the foreign flag MSO RBRs. The risk-based ranking results in this appendix are expressed as absolute risk, as illustrated in Table 2.2. These absolute importance measures have not be normalized to yield relative risk rankings (as was done in Section 3.2 for the USCG-wide level data aggregation). Such relative rankings could be directly developed from the absolute measures. However, the normalized rankings merely set the importance results within a convenient scale between 0.0 and 1.0. The order of rank between Level III Intervention strategies is the same for both absolute and normalized measures, and the same insights regarding the importance of the various Level III Intervention strategies to risk would be derived from either measure.

## **A.1 U.S. Flag District Level Risk-Based Ranking Results**

Bin data used in the risk-based ranking for district level data aggregation are shown in Table A.1.1. The risk-based ranking results are shown in Tables A.1.2 through A.1.9 as follows:

Table A.1.2 - U.S. Flag, District, Relative Frequency, Deaths,

Table A.1.3 - U.S. Flag, District, Relative Frequency, Injuries,

Table A.1.4 - U.S. Flag, District, Relative Frequency, Property Loss,

Table A.1.5 - U.S. Flag, District, Relative Frequency, Pollution,

Table A.1.6 - U.S. Flag, District, Casualty Frequency, Deaths,

Table A.1.7 - U.S. Flag, District, Casualty Frequency, Injuries,

Table A.1.8 - U.S. Flag, District, Casualty Frequency, Property Loss,

Table A.1.9 - U.S. Flag, District, Casualty Frequency, Pollution.

Table A.1.1 Risk-Based Ranking Bin Data Summary - USCG Districts, U.S. Flag

Table A.1.1 Risk-Based Ranking Bin Data Summary - USCG Districts, U.S. Flag										
District	Bin	Inspections	Casualties	Relative Freq.	Casualty Freq.	Casualty Freq Std Dev	Consequences			
							Deaths	Injuries	Property Loss	Pollution
1	FREIGHTER	280	102	0.05	0.36	0.0288	2	38	\$6,055,882	1653
	PASSENGER	1255	50	0.03	0.04	0.0055	1	12	\$193,300	32
	TANKER	277	87	0.04	0.31	0.0279	0	31	\$514,950	286
2	FREIGHTER	0	0	0.00	NOINSPECTIONS	NOINSPECTIONS	0	0	\$0	0
	PASSENGER	333	13	0.01	0.04	0.0106	0	2	\$93,300	0
	TANKER	0	0	0.00	NOINSPECTIONS	NOINSPECTIONS	0	0	\$0	0
5	FREIGHTER	204	93	0.05	0.46	0.0349	0	19	\$1,343,263	3174
	PASSENGER	466	62	0.03	0.13	0.0157	0	7	\$243,300	0
	TANKER	134	48	0.02	0.36	0.0414	0	7	\$151,850	146
7	FREIGHTER	164	75	0.04	0.46	0.0389	2	17	\$1,562,300	180
	PASSENGER	515	24	0.01	0.05	0.0093	0	5	\$189,200	112
	TANKER	84	58	0.03	0.69	0.0504	0	19	\$133,450	1520

Table A.1.1 Risk-Based Ranking Bin Data Summary - USCG Districts, U.S. Flag

Bin	Inspections	Casualties	Relative Freq.	Casualty Freq.	Casualty Std Dev	Consequences		
	FREIGHTER	368	0.13	0.68	0.0243	4	98	\$4,336,574
	PASSENGER	415	0.01	0.03	0.0086	0	1	\$8,270
	TANKER	228	0.06	0.48	0.0331	0	28	\$4,065,265
9	FREIGHTER	278	0.09	0.60	0.0294	1	28	\$5,248,841
	PASSENGER	511	0.01	0.04	0.0082	0	1	\$377,000
	TANKER	24	0.00	0.04	0.0408	0	0	\$0
11	FREIGHTER	242	0.08	0.61	0.0314	1	62	\$3,697,651
	PASSENGER	530	0.02	0.08	0.0115	0	2	\$24,806
	TANKER	147	0.05	0.61	0.0403	1	19	\$155,046
13	FREIGHTER	153	0.05	0.61	0.0394	1	34	\$5,209,350
	PASSENGER	281	0.04	0.25	0.0257	0	15	\$695,375
	TANKER	168	0.07	0.77	0.0323	3	37	\$278,621
14	FREIGHTER	155	0.03	0.32	0.0375	0	27	\$54,700
	PASSENGER	258	0.02	0.13	0.0208	1	5	\$1,034,020
	TANKER	127	0.05	0.76	0.0381	0	26	\$1,255,300
17	FREIGHTER	80	0.00	0.08	0.0294	0	1	\$200,000
								5

Table A.1.1 Risk-Based Ranking Bin Data Summary - USCG Districts, U.S. Flag									
Bin		Inspections	Casualties	Relative Freq.	Casualty Freq.	Casualty Freq Std Dev	Consequences		
	PASSENGER	121	15	0.01	0.12	0.0300	0	0	\$4,800
	TANKER	15	1	0.00	0.07	0.0644	0	0	\$0

Table A.1.2 Risk-Based Rankings - U.S. Flag, District, Relative Frequency, Deaths

Table A.1.2 Risk-Based Rankings - U.S. Flag, District, Relative Frequency, Deaths												
Bin		Intervention Strategy Importance										
District	Service	Cargo/Pol.	Steering	Documents	Drills	Auxiliary Sys.	Power Plant	Fire Prevention	Hull	Lifesaving	Other	
1	FREIGHTER	0.0124	0.0134	0.0000	0.0433	0.0000	0.0051	0.0021	0.0021	0.0000	0.0041	
1	PASSENGER	0.0010	0.0144	0.0000	0.0062	0.0000	0.0000	0.0010	0.0015	0.0000	0.0010	
1	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
2	Freighter	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
2	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
2	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
5	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
5	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
5	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
7	FREIGHTER	0.0072	0.0216	0.0000	0.0196	0.0000	0.0051	0.0010	0.0021	0.0000	0.0021	
7	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
7	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
8	FREIGHTER	0.0515	0.0927	0.0000	0.2142	0.0000	0.0082	0.0062	0.0103	0.0000	0.0206	
8	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
8	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
9	FREIGHTER	0.0113	0.0263	0.0000	0.0160	0.0000	0.0057	0.0015	0.0057	0.0000	0.0010	
9	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	

Table A.1.1.2 Risk-Based Rankings - U.S. Flag, District, Relative Frequency, Deaths

Bin		Intervention Strategy Importance									
District	Service	Cargo/Poll.	Steering	Documents	Drills	Auxiliary Sys.	Power Plant	Fire Prevention	Hull	Lifesaving	Other
9	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
11	FREIGHTER	0.0093	0.0113	0.0000	0.0304	0.0000	0.0026	0.0010	0.0108	0.0000	0.0005
11	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
11	TANKER	0.0139	0.0072	0.0000	0.0103	0.0000	0.0005	0.0005	0.0046	0.0000	0.0015
13	FREIGHTER	0.0088	0.0067	0.0000	0.0180	0.0000	0.0005	0.0015	0.0015	0.0000	0.0005
13	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
13	TANKER	0.0247	0.0433	0.0000	0.0649	0.0000	0.0031	0.0000	0.0093	0.0000	0.0093
14	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
14	PASSENGER	0.0010	0.0077	0.0000	0.0031	0.0000	0.0010	0.0005	0.0000	0.0000	0.0005
14	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
17	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
17	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
17	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Table A.1.3 Risk-Based Rankings - U.S. Flag, District, Relative Frequency, Injuries

Table A.1.3 Risk-Based Rankings - U.S. Flag, District, Relative Frequency, Injuries											
Bin		Level III Intervention Strategy Importance									
District	Service	Cargo/Pol.	Steering	Documents	Drills	Auxiliary Sys.	Power Plant	Fire Prevention	Hull	Lifesaving	Other
1	FREIGHTER	0.2348	0.2544	0.0000	0.8218	0.0000	0.0978	0.0391	0.0391	0.0000	0.0783
1	PASSENGER	0.0124	0.1730	0.0000	0.0742	0.0000	0.0000	0.0124	0.0185	0.0000	0.0124
1	TANKER	0.1736	0.2394	0.0000	0.4789	0.0000	0.0319	0.0160	0.0639	0.0000	0.0000
2	Freighter	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	PASSENGER	0.0000	0.0031	0.0000	0.0021	0.0000	0.0000	0.0021	0.0000	0.0000	0.0000
2	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5	FREIGHTER	0.1565	0.2152	0.0000	0.1859	0.0000	0.0783	0.0294	0.0196	0.0000	0.0294
5	PASSENGER	0.0000	0.1009	0.0000	0.0180	0.0000	0.0433	0.0072	0.0180	0.0000	0.0036
5	TANKER	0.0324	0.0288	0.0000	0.0252	0.0000	0.0360	0.0036	0.0000	0.0000	0.0036
7	FREIGHTER	0.0613	0.1838	0.0000	0.1663	0.0000	0.0438	0.0088	0.0175	0.0000	0.0175
7	PASSENGER	0.0129	0.0438	0.0000	0.0051	0.0000	0.0026	0.0026	0.0026	0.0000	0.0000
7	TANKER	0.1565	0.0978	0.0000	0.1859	0.0000	0.0294	0.0098	0.0196	0.0000	0.0000
8	FREIGHTER	1.2616	2.2709	0.0000	5.2482	0.0000	0.2019	0.1514	0.2523	0.0000	0.5046
8	PASSENGER	0.0000	0.0036	0.0000	0.0005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	TANKER	0.2739	0.5191	0.0000	0.4181	0.0000	0.0288	0.0000	0.0721	0.0000	0.0433
9	FREIGHTER	0.3172	0.7353	0.0000	0.4470	0.0000	0.1586	0.0433	0.1586	0.0000	0.0288
9	PASSENGER	0.0005	0.0067	0.0000	0.0005	0.0000	0.0000	0.0000	0.0005	0.0000	0.0000



Table A.1.3 Risk-Based Rankings - U.S. Flag, District, Relative Frequency, Injuries												
Bin		Level III Intervention Strategy Importance										
District	Service	Cargo/Pol.	Steering	Documents	Drills	Auxiliary Sys.	Power Plant	Fire Prevention	Hull	Liferaing	Other	
9	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
11	FREIGHTER	0.5747	0.7024	0.0000	1.8836	0.0000	0.1596	0.0639	0.6704	0.0000	0.0319	
11	PASSENGER	0.0082	0.0144	0.0000	0.0031	0.0000	0.0010	0.0000	0.0051	0.0000	0.0021	
11	TANKER	0.2642	0.1370	0.0000	0.1957	0.0000	0.0098	0.0098	0.0881	0.0000	0.0294	
13	FREIGHTER	0.2976	0.2276	0.0000	0.6128	0.0000	0.0175	0.0525	0.0525	0.0000	0.0175	
13	PASSENGER	0.0232	0.2394	0.0000	0.1159	0.0000	0.0463	0.0232	0.0154	0.0000	0.0000	
13	TANKER	0.3048	0.5335	0.0000	0.8002	0.0000	0.0381	0.0000	0.1143	0.0000	0.1143	
14	FREIGHTER	0.0278	0.0973	0.0000	0.3754	0.0000	0.0000	0.0000	0.0417	0.0000	0.0000	
14	PASSENGER	0.0051	0.0386	0.0000	0.0154	0.0000	0.0051	0.0026	0.0000	0.0000	0.0026	
14	TANKER	0.1473	0.1740	0.0000	0.3481	0.0000	0.0803	0.0402	0.1607	0.0000	0.0134	
17	FREIGHTER	0.0015	0.0005	0.0000	0.0005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
17	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
17	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	

Table A.1.4 Risk-Based Rankings - U.S. Flag, District, Relative Frequency, Property Loss

Table A.1.4 Risk-Based Rankings - U.S. Flag, District, Relative Frequency, Property Loss											
Bin		Level III Intervention Strategy Importance									
District	Service	Cargo/Poll.	Steering	Documents	Drills	Auxiliary Sys.	Power Plant	Fire Prevention	Hull	Liferaaving	Other
1	FREIGHTER	\$37,40	\$40,539	\$0	\$130,972	\$0	\$15,592	\$6,237	\$6,237	\$0	\$12,473
1	PASSENGER	\$199	\$2,787	\$0	\$1,194	\$0	\$0	\$199	\$299	\$0	\$199
1	TANKER	\$2,917	\$3,977	\$0	\$7,955	\$0	\$530	\$265	\$1,061	\$0	\$0
2	Freighter	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2	PASSENGER	\$0	\$144	\$0	\$96	\$0	\$0	\$96	\$0	\$0	\$0
2	TANKER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
5	FREIGHTER	\$11,067	\$15,217	\$0	\$13,142	\$0	\$5,534	\$2,075	\$1,383	\$0	\$2,075
5	PASSENGER	\$0	\$3,508	\$0	\$626	\$0	\$1,503	\$251	\$626	\$0	\$125
5	TANKER	\$704	\$626	\$0	\$547	\$0	\$782	\$78	\$0	\$0	\$78
7	FREIGHTER	\$5,631	\$16,894	\$0	\$15,285	\$0	\$4,022	\$804	\$1,609	\$0	\$1,609
7	PASSENGER	\$487	\$1,656	\$0	\$195	\$0	\$97	\$97	\$97	\$0	\$0
7	TANKER	\$1,099	\$687	\$0	\$1,306	\$0	\$206	\$69	\$137	\$0	\$0
8	FREIGHTER	\$55,826	\$100,487	\$0	\$232,237	\$0	\$8,932	\$6,699	\$11,165	\$0	\$22,330
8	PASSENGER	\$0	\$30	\$0	\$4	\$0	\$0	\$0	\$0	\$0	\$0
8	TANKER	\$39,773	\$75,360	\$0	\$60,707	\$0	\$4,187	\$0	\$10,467	\$0	\$6,280
9	FREIGHTER	\$59,462	\$137,843	\$0	\$83,787	\$0	\$29,731	\$8,108	\$29,731	\$0	\$5,406
9	PASSENGER	\$194	\$2,524	\$0	\$194	\$0	\$0	\$0	\$194	\$0	\$0

Table A.1.4 Risk-Based Rankings - U.S. Flag, District, Relative Frequency, Property Loss												
Bin		Level III Intervention Strategy Importance										
District	Service	Cargo/Pol.	Steering	Documents	Drills	Auxiliary Sys.	Power Plant	Fire Prevention	Hull	Lifesaving	Other	
9	TANKER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
11	FREIGHTER	\$34,273	\$41,889	\$0	\$112,339	\$0	\$9,520	\$3,808	\$39,985	\$0	\$1,904	
11	PASSENGER	\$102	\$179	\$0	\$38	\$0	\$13	\$0	\$64	\$0	\$26	
11	TANKER	\$2,156	\$1,118	\$0	\$1,597	\$0	\$80	\$80	\$719	\$0	\$240	
13	FREIGHTER	\$45,602	\$34,872	\$0	\$93,886	\$0	\$2,682	\$8,047	\$8,047	\$0	\$2,682	
13	PASSENGER	\$1,074	\$11,100	\$0	\$5,371	\$0	\$2,148	\$1,074	\$716	\$0	\$0	
13	TANKER	\$2,296	\$4,017	\$0	\$6,026	\$0	\$287	\$0	\$861	\$0	\$861	
14	FREIGHTER	\$56	\$197	\$0	\$761	\$0	\$0	\$0	\$85	\$0	\$0	
14	PASSENGER	\$1,065	\$7,987	\$0	\$3,195	\$0	\$1,065	\$532	\$0	\$0	\$532	
14	TANKER	\$7,110	\$8,403	\$0	\$16,806	\$0	\$3,878	\$1,939	\$7,757	\$0	\$646	
17	FREIGHTER	\$309	\$103	\$0	\$103	\$0	\$0	\$0	\$0	\$0	\$0	
17	PASSENGER	\$2	\$15	\$0	\$0	\$0	\$7	\$2	\$0	\$0	\$0	
17	TANKER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	

Table A.1.5 Risk-Based Rankings - U.S. Flag, District, Relative Frequency, Pollution

Table A.1.5 Risk-Based Rankings - U.S. Flag, District, Relative Frequency, Pollution											
Bin		Level III Intervention Strategy Importance									
District	Service	Cargo/Poll.	Steering	Documents	Drills	Auxiliary Sys.	Power Plant	Fire Prevention	Hull	Lifesaving	Other
1	FREIGHTER	10	11	0	36	0	4	2	2	0	3
1	PASSENGER	0	0	0	0	0	0	0	0	0	0
1	TANKER	2	2	0	4	0	0	0	1	0	0
2	Freighter	0	0	0	0	0	0	0	0	0	0
2	PASSENGER	0	0	0	0	0	0	0	0	0	0
2	TANKER	0	0	0	0	0	0	0	0	0	0
5	FREIGHTER	26	36	0	31	0	13	5	3	0	5
5	PASSENGER	0	0	0	0	0	0	0	0	0	0
5	TANKER	1	1	0	1	0	1	0	0	0	0
7	FREIGHTER	1	2	0	2	0	0	0	0	0	0
7	PASSENGER	0	1	0	0	0	0	0	0	0	0
7	TANKER	13	8	0	15	0	2	1	2	0	0
8	FREIGHTER	187	336	0	777	0	30	22	37	0	75
8	PASSENGER	0	0	0	10	0	0	0	0	0	0
8	TANKER	15	29	0	23	0	2	0	4	0	2
9	FREIGHTER	23	53	0	32	0	11	3	11	0	2
9	PASSENGER	0	0	0	0	0	0	0	0	0	0

Table A.1.5 Risk-Based Rankings - U.S. Flag, District, Relative Frequency, Pollution												
Bin		Level III Intervention Strategy Importance										
District	Service	Cargo/Poll.	Steering	Documents	Drills	Auxiliary Sys.	Power Plant	Fire Prevention	Hull	Lifesaving	Other	
9	TANKER	0	0	0	0	0	0	0	0	0	0	
11	FREIGHTER	4	5	0	13	0	1	0	5	0	0	
11	PASSENGER	0	0	0	0	0	0	0	0	0	0	
11	TANKER	40	21	0	29	0	1	1	13	0	4	
13	FREIGHTER	2	2	0	5	0	0	0	0	0	0	
13	PASSENGER	0	0	0	0	0	0	0	0	0	0	
13	TANKER	1	2	0	4	0	0	0	1	0	1	
14	FREIGHTER	26	92	0	354	0	0	0	39	0	0	
14	PASSENGER	1	8	0	3	0	1	1	0	0	1	
14	TANKER	12	14	0	28	0	6	3	13	0	1	
17	FREIGHTER	0	0	0	0	0	0	0	0	0	0	
17	PASSENGER	0	0	0	0	0	0	0	0	0	0	
17	TANKER	0	0	0	0	0	0	0	0	0	0	

Table A.1.6 Risk-Based Rankings - U.S. Flag, District, Casualty Frequency, Deaths

Table A.1.6 Risk-Based Rankings - U.S. Flag, District, Casualty Frequency, Deaths												
Bin		Level III Intervention Strategy Importance										
District	Service	Cargo/Pol.	Steering	Documents	Drills	Auxiliary Sys.	Power Plant	Fire Prevention	Hull	Lifesaving	Other	
1	FREIGHTER	0.0857	0.0929	0.0000	0.3000	0.0000	0.0357	0.0143	0.0143	0.0000	0.0286	
1	PASSENGER	0.0016	0.0223	0.0000	0.0096	0.0000	0.0000	0.0016	0.0024	0.0000	0.0016	
1	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
2	Freighter	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
2	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
2	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
5	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
5	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
5	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
7	FREIGHTER	0.0854	0.2561	0.0000	0.2317	0.0000	0.0610	0.0122	0.0244	0.0000	0.0244	
7	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
7	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
8	FREIGHTER	0.2717	0.4891	0.0000	1.1304	0.0000	0.0435	0.0326	0.0543	0.0000	0.1087	
8	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
8	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
9	FREIGHTER	0.0791	0.1835	0.0000	0.1115	0.0000	0.0396	0.0108	0.0396	0.0000	0.0072	
9	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	

Table A.1.6 Risk-Based Rankings - U.S. Flag, District, Casualty Frequency, Deaths												
Bin		Level III Intervention Strategy Importance										
District	Service	Cargo/Poll.	Steering	Documents	Drills	Auxiliary Sys.	Power Plant	Fire Prevention	Hull	Lifesaving	Other	
9	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
11	FREIGHTER	0.0744	0.0909	0.0000	0.2438	0.0000	0.0207	0.0083	0.0868	0.0000	0.0041	
11	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
11	TANKER	0.1837	0.0952	0.0000	0.1361	0.0000	0.0068	0.0068	0.0612	0.0000	0.0204	
13	FREIGHTER	0.1111	0.0850	0.0000	0.2288	0.0000	0.0065	0.0196	0.0196	0.0000	0.0065	
13	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
13	TANKER	0.2857	0.5000	0.0000	0.7500	0.0000	0.0357	0.0000	0.1071	0.0000	0.1071	
14	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
14	PASSENGER	0.0078	0.0581	0.0000	0.0233	0.0000	0.0078	0.0039	0.0000	0.0000	0.0039	
14	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
17	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
17	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
17	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	

Table A.1.7 Risk-Based Rankings - U.S. Flag, District, Casualty Frequency, Injuries

Table A.1.7 Risk-Based Rankings - U.S. Flag, District, Casualty Frequency, Injuries											
Bin		Level III Intervention Strategy Importance									
District	Service	Cargo/Pol.	Steering	Documents	Drills	Auxiliary Sys.	Power Plant	Fire Prevention	Hull	Lifesaving	Other
1	FREIGHTER	1.6286	1.7643	0.0000	5.7000	0.0000	0.6786	0.2714	0.2714	0.0000	0.5429
1	PASSENGER	0.0191	0.2677	0.0000	0.1147	0.0000	0.0000	0.0191	0.0287	0.0000	0.0191
1	TANKER	1.2310	1.6787	0.0000	3.3574	0.0000	0.2238	0.1119	0.4477	0.0000	0.0000
2	Freighter	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	PASSENGER	0.0000	0.0180	0.0000	0.0120	0.0000	0.0000	0.0120	0.0000	0.0000	0.0000
2	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5	FREIGHTER	1.4902	2.0490	0.0000	1.7696	0.0000	0.7451	0.2794	0.1863	0.0000	0.2794
5	PASSENGER	0.0000	0.4206	0.0000	0.0751	0.0000	0.1803	0.0300	0.0751	0.0000	0.0150
5	TANKER	0.4701	0.4179	0.0000	0.3657	0.0000	0.5224	0.0522	0.0000	0.0000	0.0522
7	FREIGHTER	0.7256	2.1768	0.0000	1.9695	0.0000	0.5183	0.1037	0.2073	0.0000	0.2073
7	PASSENGER	0.0485	0.1650	0.0000	0.0194	0.0000	0.0097	0.0097	0.0097	0.0000	0.0000
7	TANKER	3.6190	2.2619	0.0000	4.2976	0.0000	0.6786	0.2262	0.4524	0.0000	0.0000
8	FREIGHTER	6.6576	11.9837	0.0000	27.6957	0.0000	1.0652	0.7989	1.3315	0.0000	2.6630
8	PASSENGER	0.0000	0.0169	0.0000	0.0024	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	TANKER	2.3333	4.4211	0.0000	3.5614	0.0000	0.2456	0.0000	0.6140	0.0000	0.3684
9	FREIGHTER	2.2158	5.1367	0.0000	3.1223	0.0000	1.1079	0.3022	1.1079	0.0000	0.2014
9	PASSENGER	0.0020	0.0254	0.0000	0.0020	0.0000	0.0000	0.0000	0.0020	0.0000	0.0000



Table A.1.7 Risk-Based Rankings - U.S. Flag, District, Casualty Frequency, Injuries												
Bin		Level III Intervention Strategy Importance										
District	Service	Cargo/Pol.	Steering	Documents	Drills	Auxiliary Sys.	Power Plant	Fire Prevention	Hull	Lifesaving	Other	
9	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
11	FREIGHTER	4.6116	5.6364	0.0000	15.1157	0.0000	1.2810	0.5124	5.3802	0.0000	0.2562	
11	PASSENGER	0.0302	0.0528	0.0000	0.0113	0.0000	0.0038	0.0000	0.0189	0.0000	0.0075	
11	TANKER	3.4898	1.8095	0.0000	2.5850	0.0000	0.1293	0.1293	1.1633	0.0000	0.3878	
13	FREIGHTER	3.7778	2.8889	0.0000	7.7778	0.0000	0.2222	0.6667	0.6667	0.0000	0.2222	
13	PASSENGER	0.1601	1.6548	0.0000	0.8007	0.0000	0.3203	0.1601	0.1068	0.0000	0.0000	
13	TANKER	3.5238	6.1667	0.0000	9.2500	0.0000	0.4405	0.0000	1.3214	0.0000	1.3214	
14	FREIGHTER	0.3484	1.2194	0.0000	4.7032	0.0000	0.0000	0.0000	0.5226	0.0000	0.0000	
14	PASSENGER	0.0388	0.2907	0.0000	0.1163	0.0000	0.0388	0.0194	0.0000	0.0000	0.0194	
14	TANKER	2.2520	2.6614	0.0000	5.3228	0.0000	1.2283	0.6142	2.4567	0.0000	0.2047	
17	FREIGHTER	0.0375	0.0125	0.0000	0.0125	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
17	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
17	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	

Table A.1.8 Risk-Based Rankings - U.S. Flag, District, Casualty Frequency, Property Loss

Table A.1.8 Risk-Based Rankings - U.S. Flag, District, Casualty Frequency, Property Loss											
Bin		Level III Intervention Strategy Importance									
District	Service	Cargo/Pol.	Steering	Documents	Drills	Auxiliary Sys.	Power Plant	Fire Prevention	Hull	Lifesaving	Other
1	FREIGHTER	\$150,306	\$179,398	\$0	\$19,394	\$0	\$9,697	\$14,546	\$19,394	\$0	\$646
1	PASSENGER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
1	TANKER	\$38,024	\$19,555	\$0	\$2,173	\$0	\$3,259	\$0	\$0	\$0	\$0
2	FREIGHTER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2	PASSENGER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2	TANKER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
5	FREIGHTER	\$20,705	\$20,705	\$0	\$3,106	\$0	\$1,553	\$0	\$1,553	\$0	\$104
5	PASSENGER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
5	TANKER	\$11,806	\$8,142	\$0	\$2,036	\$0	\$0	\$0	\$0	\$0	\$81
7	FREIGHTER	\$52,483	\$21,735	\$0	\$1,060	\$0	\$1,590	\$1,060	\$3,181	\$0	\$114
7	PASSENGER	\$22,447	\$6,414	\$0	\$9,620	\$0	\$3,207	\$6,414	\$0	\$0	\$0
7	TANKER	\$12,600	\$6,873	\$0	\$573	\$0	\$0	\$0	\$573	\$0	\$0
8	FREIGHTER	\$65,327	\$79,844	\$0	\$10,485	\$0	\$9,678	\$0	\$3,226	\$0	\$248
8	PASSENGER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
8	TANKER	\$170,630	\$174,896	\$0	\$34,126	\$0	\$8,532	\$25,595	\$17,063	\$0	\$656
9	FREIGHTER	\$99,978	\$249,945	\$0	\$39,991	\$0	\$0	\$19,996	\$29,993	\$0	\$0
9	PASSENGER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0

Table A.1.8 Risk-Based Rankings - U.S. Flag, District, Casualty Frequency, Property Loss												
Bin		Level III Intervention Strategy Importance										
District	Service	Cargo/Poll.	Steering	Documents	Drills	Auxiliary Sys.	Power Plant	Fire Prevention	Hull	Lifesaving	Other	
9	TANKER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
11	FREIGHTER	\$45,550	\$39,043	\$0	\$11,387	\$0	\$4,880	\$1,627	\$3,254	\$0	\$325	
11	PASSENGER	\$1,908	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
11	TANKER	\$4,771	\$3,976	\$0	\$0	\$0	\$795	\$0	\$0	\$0	\$0	
13	FREIGHTER	\$61,790	\$42,778	\$0	\$11,883	\$0	\$7,130	\$4,753	\$2,377	\$0	\$1,358	
13	PASSENGER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
13	TANKER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
14	FREIGHTER	\$803	\$229	\$0	\$0	\$0	\$115	\$0	\$0	\$0	\$0	
14	PASSENGER	\$188,004	\$141,003	\$0	\$987,019	\$0	\$0	\$0	\$0	\$0	\$0	
14	TANKER	\$23,685	\$5,921	\$0	\$0	\$0	\$0	\$17,764	\$0	\$0	\$846	
17	FREIGHTER	\$4,270	\$3,559	\$0	\$0	\$0	\$0	\$0	\$2,135	\$0	\$0	
17	PASSENGER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
17	TANKER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	

Table A.1.9 Risk-Based Rankings - U.S. Flag, District, Casualty Frequency, Pollution

Bin		Level III Intervention Strategy Importance									
District	Service	Cargo/Poll.	Steering	Documents	Drills	Auxiliary Sys.	Power Plant	Fire Prevention	Hull	Lifesaving	Other
1	FREIGHTER	71	77	0	248	0	30	12	12	0	24
1	PASSENGER	0	1	0	0	0	0	0	0	0	0
1	TANKER	11	15	0	31	0	2	1	4	0	0
2	Freighter	0	0	0	0	0	0	0	0	0	0
2	PASSENGER	0	0	0	0	0	0	0	0	0	0
2	TANKER	0	0	0	0	0	0	0	0	0	0
5	FREIGHTER	249	342	0	296	0	124	47	31	0	47
5	PASSENGER	0	0	0	0	0	0	0	0	0	0
5	TANKER	10	9	0	8	0	11	1	0	0	1
7	FREIGHTER	8	23	0	21	0	5	1	2	0	2
7	PASSENGER	1	4	0	0	0	0	0	0	0	0
7	TANKER	290	181	0	344	0	54	18	36	0	0
8	FREIGHTER	986	1775	0	4102	0	158	118	197	0	394
8	PASSENGER	0	0	0	0	0	0	0	0	0	0
8	TANKER	130	247	0	199	0	14	0	34	0	21
9	FREIGHTER	159	368	0	223	0	79	22	79	0	14
9	PASSENGER	0	0	0	0	0	0	0	0	0	0

Table A.1.9 Risk-Based Rankings - U.S. Flag, District, Casualty Frequency, Pollution												
Bin		Level III Intervention Strategy Importance										
District	Service	Cargo/Poll.	Steering	Documents	Drills	Auxiliary Sys.	Power Plant	Fire Prevention	Hull	Lifeaving	Other	
9	TANKER	0	0	0	0	0	0	0	0	0	0	
11	FREIGHTER	32	39	0	105	0	9	4	37	0	2	
11	PASSENGER	1	2	0	0	0	0	0	1	0	0	
11	TANKER	525	272	0	389	0	19	19	175	0	58	
13	FREIGHTER	29	22	0	60	0	2	5	5	0	2	
13	PASSENGER	0	1	0	0	0	0	0	0	0	0	
13	TANKER	16	28	0	42	0	2	0	6	0	6	
14	FREIGHTER	328	1150	0	4434	0	0	0	493	0	0	
14	PASSENGER	8	59	0	23	0	8	4	0	0	4	
14	TANKER	178	210	0	421	0	97	49	194	0	16	
17	FREIGHTER	0	0	0	0	0	0	0	0	0	0	
17	PASSENGER	0	1	0	0	0	1	0	0	0	0	
17	TANKER	0	0	0	0	0	0	0	0	0	0	

## **A.2 Foreign Flag District Level Risk-Based Ranking Results**

Bin data used in the risk-based ranking for district level data aggregation are shown in Table A.2.1. The risk-based ranking results are shown in Tables A.2.2 through A.2.9 as follows:

Table A.2.2 - Foreign Flag, District, Relative Frequency, Deaths,

Table A.2.3 - Foreign Flag, District, Relative Frequency, Injuries,

Table A.2.4 - Foreign Flag, District, Relative Frequency, Property Loss,

Table A.2.5 - Foreign Flag, District, Relative Frequency, Pollution,

Table A.2.6 - Foreign Flag, District, Casualty Frequency, Deaths,

Table A.2.7 - Foreign Flag, District, Casualty Frequency, Injuries,

Table A.2.8 - Foreign Flag, District, Casualty Frequency, Property Loss,

Table A.2.9 - Foreign Flag, District, Casualty Frequency, Pollution.

Table A.2.1 Risk-Based Ranking Bin Data Summary - USCG Districts, Foreign Flag

Table A.2.1 Risk-Based Ranking Bin Data Summary - USCG Districts, Foreign Flag										
Bin		inspections	casualties	Relative Freq.	Casualty Freq.	Casualty Frequency Standard Deviation	Consequences			
District	Service						Deaths	injuries	Property Loss	pollution
1	FREIGHTER	1249	93	0.07	0.07	0.0074	0	4	\$1,772,330	827
1	PASSENGER	0	0	0.00	NOINSTRUCTIONS	NOINSTRUCTIONS	0	0	\$0	0
1	TANKER	474	74	0.06	0.16	0.0167	1	1	\$231,500	100842
2	FREIGHTER	0	0	0.00	NOINSTRUCTIONS	NOINSTRUCTIONS	0	0	\$0	0
2	PASSENGER	0	0	0.00	NOINSTRUCTIONS	NOINSTRUCTIONS	0	0	\$0	0
2	TANKER	0	0	0.00	NOINSTRUCTIONS	NOINSTRUCTIONS	0	0	\$0	0
5	FREIGHTER	2595	109	0.08	0.04	0.0039	2	4	\$2,233,554	7435
5	PASSENGER	2	0	0.00	0.00	0.0000	0	0	\$0	0
5	TANKER	373	67	0.05	0.18	0.0199	1	2	\$265,111	14951
7	FREIGHTER	2947	185	0.14	0.06	0.0045	2	1	\$4,652,225	154337
7	PASSENGER	59	29	0.02	0.49	0.0651	0	4	\$20,000	295

Table A.2.1 Risk-Based Ranking Bin Data Summary - USCG Districts, Foreign Flag										
Bin		inspections	casualties	Relative Freq.	Casualty Freq.	Casualty Frequency Standard Deviation	Consequences			
District	Service						Deaths	injuries	Property Loss	pollution
7	TANKER	233	47	0.04	0.20	0.0263	0	1	\$60,300	4054
8	FREIGHTER	5377	243	0.19	0.05	0.0028	2	7	\$5,579,089	260268
8	PASSENGER	0	0	0.00	NOINSTRUCTIONS	NOINSTRUCTIONS	0	0	\$0	0
8	TANKER	953	134	0.10	0.14	0.0113	1	9	\$1,324,934	41217
9	FREIGHTER	525	53	0.04	0.10	0.0131	1	1	\$1,740,425	149
9	PASSENGER	0	0	0.00	NOINSTRUCTIONS	NOINSTRUCTIONS	0	0	\$0	0
9	TANKER	31	3	0.00	0.10	0.0531	0	0	\$250,000	0
11	FREIGHTER	2273	83	0.06	0.04	0.0039	0	4	\$7,469,969	8698
11	PASSENGER	13	5	0.00	0.38	0.1349	0	0	\$0	2
11	TANKER	195	17	0.01	0.09	0.0202	0	0	\$300,000	339
13	FREIGHTER	2192	82	0.06	0.04	0.0041	2	2	\$354,600	7916
13	PASSENGER	1	0	0.00	0.00	0.0000	0	0	\$0	0
13	TANKER	61	7	0.01	0.11	0.0408	0	1	\$10,100	57
14	FREIGHTER	477	11	0.01	0.02	0.0069	0	0	\$0	467



Table A.2.1 Risk-Based Ranking Bin Data Summary - USCG Districts, Foreign Flag										
Bin		inspections	casualties	Relative Freq.	Casualty Freq.	Casualty Frequency Standard Deviation	Consequences			
District	Service						Deaths	injuries	Property Loss	pollution
Bad Data 14	PASSENGE R	22	28	0.02	1.27	Bad Data	1	24	\$13,000,000	3
14	TANKER	212	13	0.01	0.06	0.0165	0	0	\$238,000	11
17	FREIGHTER	281	11	0.01	0.04	0.0116	0	0	\$157,700	111
17	PASSENGE R	2	0	0.00	0.00	0.0000	0	0	\$0	0
17	TANKER	25	1	0.00	0.04	0.0392	0	1	\$0	0

Table A.2.2 Risk-Based Rankings - Foreign Flag, District, Relative Frequency, Deaths

Table A.2.2 Risk-Based Rankings - Foreign Flag, District, Relative Frequency, Deaths											
Bin		Level III Intervention Strategy Importance									
District	Service	Cargo/Poll.	Steering	Documents	Drills	Auxiliary Sys.	Power Plant	Fire Prevention	Hull	Lifesaving	Other
1	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1	TANKER	0.0270	0.0139	0.0000	0.0015	0.0000	0.0023	0.0000	0.0000	0.0000	0.0000
2	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5	FREIGHTER	0.0618	0.0618	0.0000	0.0093	0.0000	0.0046	0.0000	0.0046	0.0000	0.0031
5	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5	TANKER	0.0224	0.0154	0.0000	0.0039	0.0000	0.0000	0.0000	0.0000	0.0000	0.0015
7	FREIGHTER	0.1529	0.0633	0.0000	0.0031	0.0000	0.0046	0.0031	0.0093	0.0000	0.0046
7	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	FREIGHTER	0.1251	0.1529	0.0000	0.0201	0.0000	0.0185	0.0000	0.0062	0.0000	0.0124
8	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	TANKER	0.0309	0.0317	0.0000	0.0062	0.0000	0.0015	0.0046	0.0031	0.0000	0.0031
9	FREIGHTER	0.0077	0.0193	0.0000	0.0031	0.0000	0.0000	0.0015	0.0023	0.0000	0.0000
9	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Table A.2.2 Risk-Based Rankings - Foreign Flag, District, Relative Frequency, Deaths												
Bin		Level III Intervention Strategy Importance										
District	Service	Cargo/Poll.	Steering	Documents	Drills	Auxiliary Sys.	Power Plant	Fire Prevention	Hull	Lifeaving	Other	
9	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
11	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
11	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
11	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
13	FREIGHTER	0.0402	0.0278	0.0000	0.0077	0.0000	0.0046	0.0031	0.0015	0.0000	0.0062	
13	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
13	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
14	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
Bad Data 14	PASSENGER	0.0000	0.0023	0.0000	0.0162	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
14	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
17	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
17	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
17	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	

Table A.2.3 Risk-Based Rankings - Foreign Flag, District, Relative Frequency, Injuries

Table A.2.3 Risk-Based Rankings - Foreign Flag, District, Relative Frequency, Injuries											
Bin		Level III Intervention Strategy Importance									
District	Service	Cargo/Poll.	Steering	Documents	Drills	Auxiliary Sys.	Power Plant	Fire Prevention	Hull	Lifesaving	Other
1	FREIGHTER	0.0958	0.1143	0.0000	0.0124	0.0000	0.0062	0.0093	0.0124	0.0000	0.0062
1	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1	TANKER	0.0270	0.0139	0.0000	0.0015	0.0000	0.0023	0.0000	0.0000	0.0000	0.0000
2	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5	FREIGHTER	0.1236	0.1236	0.0000	0.0185	0.0000	0.0093	0.0000	0.0093	0.0000	0.0062
5	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5	TANKER	0.0448	0.0309	0.0000	0.0077	0.0000	0.0000	0.0000	0.0000	0.0000	0.0031
7	FREIGHTER	0.0764	0.0317	0.0000	0.0015	0.0000	0.0023	0.0015	0.0046	0.0000	0.0023
7	PASSENGER	0.0216	0.0062	0.0000	0.0093	0.0000	0.0031	0.0062	0.0000	0.0000	0.0000
7	TANKER	0.0170	0.0093	0.0000	0.0008	0.0000	0.0000	0.0000	0.0008	0.0000	0.0000
8	FREIGHTER	0.4378	0.5351	0.0000	0.0703	0.0000	0.0649	0.0000	0.0216	0.0000	0.0432
8	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	TANKER	0.2780	0.2849	0.0000	0.0556	0.0000	0.0139	0.0417	0.0278	0.0000	0.0278
9	FREIGHTER	0.0077	0.0193	0.0000	0.0031	0.0000	0.0000	0.0015	0.0023	0.0000	0.0000
9	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Table A.2.3 Risk-Based Rankings - Foreign Flag, District, Relative Frequency, Injuries												
Bin		Level III Intervention Strategy Importance										
District	Service	Cargo/Poll.	Steering	Documents	Drills	Auxiliary Sys.	Power Plant	Fire Prevention	Hull	Lifesaving	Other	
9	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
11	FREIGHTER	0.0865	0.0741	0.0000	0.0216	0.0000	0.0093	0.0031	0.0062	0.0000	0.0062	
11	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
11	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
13	FREIGHTER	0.0402	0.0278	0.0000	0.0077	0.0000	0.0046	0.0031	0.0015	0.0000	0.0062	
13	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
13	TANKER	0.0023	0.0008	0.0000	0.0008	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
14	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
Bad Data 14	PASSENGER	0.0000	0.0556	0.0000	0.3892	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
14	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
17	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
17	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
17	TANKER	0.0000	0.0000	0.0000	0.0008	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	

Table A.2.4 Risk-Based Rankings - Foreign Flag, District, Relative Frequency, Property Loss

Table A.2.4 Risk-Based Rankings - Foreign Flag, District, Relative Frequency, Property Loss											
Bin		Level III Intervention Strategy Importance									
District	Service	Cargo/Poll.	Steering	Documents	Drills	Auxiliary Sys.	Power Plant	Fire Prevention	Hull	Lifesaving	Other
1	FREIGHTER	42426	50638	0	5474	0	2737	4106	5474	0	2737
1	PASSENGER	0	0	0	0	0	0	0	0	0	0
1	TANKER	6257	3218	0	358	0	536	0	0	0	0
2	FREIGHTER	0	0	0	0	0	0	0	0	0	0
2	PASSENGER	0	0	0	0	0	0	0	0	0	0
2	TANKER	0	0	0	0	0	0	0	0	0	0
5	FREIGHTER	68990	68990	0	10349	0	5174	0	5174	0	3450
5	PASSENGER	0	0	0	0	0	0	0	0	0	0
5	TANKER	5937	4094	0	1024	0	0	0	0	0	409
7	FREIGHTER	355653	147291	0	7185	0	10777	7185	21555	0	10777
7	PASSENGER	108	31	0	46	0	15	31	0	0	0
7	TANKER	1024	559	0	47	0	0	0	47	0	0
8	FREIGHTER	348962	426510	0	56006	0	51698	0	17233	0	34465
8	PASSENGER	0	0	0	0	0	0	0	0	0	0
8	TANKER	40925	41948	0	8185	0	2046	6139	4092	0	4092
9	FREIGHTER	13440	33599	0	5376	0	0	2688	4032	0	0
9	PASSENGER	0	0	0	0	0	0	0	0	0	0

Table A.2.4 Risk-Based Rankings - Foreign Flag, District, Relative Frequency, Property Loss											
Bin		Level III Intervention Strategy Importance									
District	Service	Cargo/Poll.	Steering	Documents	Drills	Auxiliary Sys.	Power Plant	Fire Prevention	Hull	Liferaaving	Other
9	TANKER	0	193	0	0	0	0	0	0	0	0
11	FREIGHTER	161513	138440	0	40378	0	17305	5768	11537	0	11537
11	PASSENGER	0	0	0	0	0	0	0	0	0	0
11	TANKER	1390	1158	0	0	0	232	0	0	0	0
13	FREIGHTER	7119	4929	0	1369	0	821	548	274	0	1095
13	PASSENGER	0	0	0	0	0	0	0	0	0	0
13	TANKER	23	8	0	8	0	0	0	0	0	0
14	FREIGHTER	0	0	0	0	0	0	0	0	0	0
Bad Data 14	PASSENGER	0	30116	0	210811	0	0	0	0	0	0
14	TANKER	735	184	0	0	0	0	551	0	0	184
17	FREIGHTER	731	609	0	0	0	0	0	365	0	0
17	PASSENGER	0	0	0	0	0	0	0	0	0	0
17	TANKER	0	0	0	0	0	0	0	0	0	0

Table A.2.5 Risk-Based Rankings - Foreign Flag, District, Relative Frequency, Pollution

Table A.2.5 Risk-Based Rankings - Foreign Flag, District, Relative Frequency, Pollution											
Bin		Level III Intervention Strategy Importance									
District	Service	Cargo/Poll.	Steering	Documents	Drills	Auxiliary Sys.	Power Plant	Fire Prevention	Hull	Lifesaving	Other
1	FREIGHTER	20	24	0	3	0	1	2	3	0	1
1	PASSENGER	0	0	0	0	0	0	0	0	0	0
1	TANKER	2725	1402	0	156	0	234	0	0	0	0
2	FREIGHTER	0	0	0	0	0	0	0	0	0	0
2	PASSENGER	0	0	0	0	0	0	0	0	0	0
2	TANKER	0	0	0	0	0	0	0	0	0	0
5	FREIGHTER	230	230	0	34	0	17	0	17	0	11
5	PASSENGER	0	0	0	0	0	0	0	0	0	0
5	TANKER	335	231	0	58	0	0	0	0	0	23
7	FREIGHTER	11799	4886	0	238	0	358	238	715	0	358
7	PASSENGER	2	0	0	1	0	0	0	0	0	0
7	TANKER	69	38	0	3	0	0	0	3	0	0
8	FREIGHTER	16279	19897	0	2613	0	2412	0	804	0	1608
8	PASSENGER	0	0	0	0	0	0	0	0	0	0
8	TANKER	1273	1305	0	255	0	64	191	127	0	127
9	FREIGHTER	1	3	0	0	0	0	0	0	0	0
9	PASSENGER	0	0	0	0	0	0	0	0	0	0



Table A.2.5 Risk-Based Rankings - Foreign Flag, District, Relative Frequency, Pollution											
Bin		Level III Intervention Strategy Importance									
District	Service	Cargo/Poll.	Steering	Documents	Drills	Auxiliary Sys.	Power Plant	Fire Prevention	Hull	Lifesaving	Other
9	TANKER	0	0	0	0	0	0	0	0	0	0
11	FREIGHTER	188	161	0	47	0	20	7	13	0	13
11	PASSENGER	0	0	0	0	0	0	0	0	0	0
11	TANKER	2	1	0	0	0	0	0	0	0	0
13	FREIGHTER	159	110	0	31	0	18	12	6	0	24
13	PASSENGER	0	0	0	0	0	0	0	0	0	0
13	TANKER	0	0	0	0	0	0	0	0	0	0
14	FREIGHTER	3	1	0	0	0	0	0	0	0	0
Bad Data 14	PASSENGER	0	0	0	0	0	0	0	0	0	0
14	TANKER	0	0	0	0	0	0	0	0	0	0
17	FREIGHTER	1	0	0	0	0	0	0	0	0	0
17	PASSENGER	0	0	0	0	0	0	0	0	0	0
17	TANKER	0	0	0	0	0	0	0	0	0	0

Table A.2.6 Risk-Based Rankings - Foreign Flag, District, Casualty Frequency, Deaths

Table A.2.6 Risk-Based Rankings - Foreign Flag, District, Casualty Frequency, Deaths												
Bin		Level III Intervention Strategy Importance										
District	Service	Cargo/Poll.	Steering	Documents	Drills	Auxiliary Sys.	Power Plant	Fire Prevention	Hull	Lifesaving	Other	
1	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
1	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
1	TANKER	0.0738	0.0380	0.0000	0.0042	0.0000	0.0063	0.0000	0.0000	0.0000	0.0000	
2	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
2	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
2	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
5	FREIGHTER	0.0308	0.0308	0.0000	0.0046	0.0000	0.0023	0.0000	0.0023	0.0000	0.0015	
5	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
5	TANKER	0.0777	0.0536	0.0000	0.0134	0.0000	0.0000	0.0000	0.0000	0.0000	0.0054	
7	FREIGHTER	0.0672	0.0278	0.0000	0.0014	0.0000	0.0020	0.0014	0.0041	0.0000	0.0020	
7	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
7	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
8	FREIGHTER	0.0301	0.0368	0.0000	0.0048	0.0000	0.0045	0.0000	0.0015	0.0000	0.0030	
8	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
8	TANKER	0.0420	0.0430	0.0000	0.0084	0.0000	0.0021	0.0063	0.0042	0.0000	0.0042	
9	FREIGHTER	0.0190	0.0476	0.0000	0.0076	0.0000	0.0000	0.0038	0.0057	0.0000	0.0000	
9	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	

Table A.2.6 Risk-Based Rankings - Foreign Flag, District, Casualty Frequency, Deaths												
Bin			Level III Intervention Strategy Importance									
District	Service	Cargo/Poll.	Steering	Documents	Drills	Auxiliary Sys.	Power Plant	Fire Prevention	Hull	Lifesaving	Other	
9	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
11	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
11	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
11	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
13	FREIGHTER	0.0237	0.0164	0.0000	0.0046	0.0000	0.0027	0.0018	0.0009	0.0000	0.0036	
13	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
13	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
14	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
Bad Data 14	PASSENGER	0.0000	0.1364	0.0000	0.9545	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
14	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
17	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
17	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
17	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	

Table A.2.7 Risk-Based Rankings - Foreign Flag, District, Casualty Frequency, Injuries

Table A.2.7 Risk-Based Rankings - Foreign Flag, District, Casualty Frequency, Injuries											
Bin		Level III Intervention Strategy Importance									
District	Service	Cargo/Pol.	Steering	Documents	Drills	Auxiliary Sys.	Power Plant	Fire Prevention	Hull	Lifesaving	Other
1	FREIGHTER	0.0993	0.1185	0.0000	0.0128	0.0000	0.0064	0.0096	0.0128	0.0000	0.0064
1	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1	TANKER	0.0738	0.0380	0.0000	0.0042	0.0000	0.0063	0.0000	0.0000	0.0000	0.0000
2	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5	FREIGHTER	0.0617	0.0617	0.0000	0.0092	0.0000	0.0046	0.0000	0.0046	0.0000	0.0031
5	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5	TANKER	0.1555	0.1072	0.0000	0.0268	0.0000	0.0000	0.0000	0.0000	0.0000	0.0107
7	FREIGHTER	0.0336	0.0139	0.0000	0.0007	0.0000	0.0010	0.0007	0.0020	0.0000	0.0010
7	PASSENGER	0.4746	0.1356	0.0000	0.2034	0.0000	0.0678	0.1356	0.0000	0.0000	0.0000
7	TANKER	0.0944	0.0515	0.0000	0.0043	0.0000	0.0000	0.0000	0.0043	0.0000	0.0000
8	FREIGHTER	0.1054	0.1289	0.0000	0.0169	0.0000	0.0156	0.0000	0.0052	0.0000	0.0104
8	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	TANKER	0.3778	0.3872	0.0000	0.0756	0.0000	0.0189	0.0567	0.0378	0.0000	0.0378
9	FREIGHTER	0.0190	0.0476	0.0000	0.0076	0.0000	0.0000	0.0038	0.0057	0.0000	0.0000
9	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Table A.2.7 Risk-Based Rankings - Foreign Flag, District, Casualty Frequency, Injuries												
Bin		Level III Intervention Strategy Importance										
District	Service	Cargo/Poll.	Steering	Documents	Drills	Auxiliary Sys.	Power Plant	Fire Prevention	Hull	Lifeaving	Other	
9	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
11	FREIGHTER	0.0493	0.0422	0.0000	0.0123	0.0000	0.0053	0.0018	0.0035	0.0000	0.0035	
11	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
11	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
13	FREIGHTER	0.0237	0.0164	0.0000	0.0046	0.0000	0.0027	0.0018	0.0009	0.0000	0.0036	
13	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
13	TANKER	0.0492	0.0164	0.0000	0.0164	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
14	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
Bad Data 14	PASSENGER	0.0000	3.2727	0.0000	22.9091	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
14	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
17	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
17	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
17	TANKER	0.0000	0.0000	0.0000	0.0400	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	

Table A.2.8 Risk-Based Rankings - Foreign Flag, District, Casualty Frequency, Property Loss

Table A.2.8 Risk-Based Rankings - Foreign Flag, District, Casualty Frequency, Property Loss											
Bin		Level III Intervention Strategy Importance									
District	Service	Cargo/Poll.	Steering	Documents	Drills	Auxiliary Sys.	Power Plant	Fire Prevention	Hull	Lifesaving	Other
1	FREIGHTER	43989	52503	0	5676	0	2838	4257	5676	0	2838
1	PASSENGER	0	0	0	0	0	0	0	0	0	0
1	TANKER	17094	8791	0	977	0	1465	0	0	0	0
2	FREIGHTER	0	0	0	0	0	0	0	0	0	0
2	PASSENGER	0	0	0	0	0	0	0	0	0	0
2	TANKER	0	0	0	0	0	0	0	0	0	0
5	FREIGHTER	34429	34429	0	5164	0	2582	0	2582	0	1721
5	PASSENGER	0	0	0	0	0	0	0	0	0	0
5	TANKER	20612	14215	0	3554	0	0	0	0	0	1422
7	FREIGHTER	156284	64724	0	3157	0	4736	3157	9472	0	4736
7	PASSENGER	2373	678	0	1017	0	339	678	0	0	0
7	TANKER	5694	3106	0	259	0	0	0	259	0	0
8	FREIGHTER	84044	102721	0	13489	0	12451	0	4150	0	8301
8	PASSENGER	0	0	0	0	0	0	0	0	0	0
8	TANKER	55611	57001	0	11122	0	2781	8342	5561	0	5561
9	FREIGHTER	33151	82877	0	13260	0	0	6630	9945	0	0
9	PASSENGER	0	0	0	0	0	0	0	0	0	0

Table A.2.8 Risk-Based Rankings - Foreign Flag, District, Casualty Frequency, Property Loss												
Bin		Level III Intervention Strategy Importance										
District	Service	Cargo/Poll.	Steering	Documents	Drills	Auxiliary Sys.	Power Plant	Fire Prevention	Hull	Lifesaving	Other	
9	TANKER	0	8065	0	0	0	0	0	0	0	0	
11	FREIGHTER	92019	78873	0	23005	0	9859	3286	6573	0	6573	
11	PASSENGER	0	0	0	0	0	0	0	0	0	0	
11	TANKER	9231	7692	0	0	0	1538	0	0	0	0	
13	FREIGHTER	4206	2912	0	809	0	485	324	162	0	647	
13	PASSENGER	0	0	0	0	0	0	0	0	0	0	
13	TANKER	497	166	0	166	0	0	0	0	0	0	
14	FREIGHTER	0	0	0	0	0	0	0	0	0	0	
Bad Data 14	PASSENGER	0	1772727	0	12409091	0	0	0	0	0	0	
14	TANKER	4491	1123	0	0	0	0	3368	0	0	1123	
17	FREIGHTER	3367	2806	0	0	0	0	0	1684	0	0	
17	PASSENGER	0	0	0	0	0	0	0	0	0	0	
17	TANKER	0	0	0	0	0	0	0	0	0	0	

Table A.2.9 Risk-Based Rankings - Foreign Flag, District, Casualty Frequency, Pollution

Table A.2.9 Risk-Based Rankings - Foreign Flag, District, Casualty Frequency, Pollution												
Bin		Level III Intervention Strategy Importance										
District	Service	Cargo/Poll.	Steering	Documents	Drills	Auxiliary Sys.	Power Plant	Fire Prevention	Hull	Lifesaving	Other	
1	FREIGHTER	21	24	0	3	0	1	2	3	0	1	
1	PASSENGER	0	0	0	0	0	0	0	0	0	0	
1	TANKER	7446	3829	0	425	0	638	0	0	0	0	
2	FREIGHTER	0	0	0	0	0	0	0	0	0	0	
2	PASSENGER	0	0	0	0	0	0	0	0	0	0	
2	TANKER	0	0	0	0	0	0	0	0	0	0	
5	FREIGHTER	115	115	0	17	0	9	0	9	0	6	
5	PASSENGER	0	0	0	0	0	0	0	0	0	0	
5	TANKER	1162	802	0	200	0	0	0	0	0	80	
7	FREIGHTER	5185	2147	0	105	0	157	105	314	0	157	
7	PASSENGER	35	10	0	15	0	5	10	0	0	0	
7	TANKER	383	209	0	17	0	0	0	17	0	0	
8	FREIGHTER	3921	4792	0	629	0	581	0	194	0	387	
8	PASSENGER	0	0	0	0	0	0	0	0	0	0	
8	TANKER	1730	1773	0	346	0	86	259	173	0	173	
9	FREIGHTER	3	7	0	1	0	0	1	1	0	0	
9	PASSENGER	0	0	0	0	0	0	0	0	0	0	



Table A.2.9 Risk-Based Rankings - Foreign Flag, District, Casualty Frequency, Pollution												
Bin		Level III Intervention Strategy Importance										
District	Service	Cargo/Poli.	Steering	Documents	Drills	Auxiliary Sys.	Power Plant	Fire Prevention	Hull	Lifesaving	Other	
9	TANKER	0	0	0	0	0	0	0	0	0	0	
11	FREIGHTER	107	02	0	27	0	11	4	8	0	8	
11	PASSENGER	0	0	0	0	0	0	0	0	0	0	
11	TANKER	10	9	0	0	0	2	0	0	0	0	
13	FREIGHTER	94	65	0	18	0	11	7	4	0	14	
13	PASSENGER	0	0	0	0	0	0	0	0	0	0	
13	TANKER	3	1	0	1	0	0	0	0	0	0	
14	FREIGHTER	7	2	0	0	0	1	0	0	0	0	
Bad Data 14	PASSENGER	0	0	0	3	0	0	0	0	0	0	
14	TANKER	0	0	0	0	0	0	0	0	0	0	
17	FREIGHTER	2	2	0	0	0	0	0	1	0	0	
17	PASSENGER	0	0	0	0	0	0	0	0	0	0	
17	TANKER	0	0	0	0	0	0	0	0	0	0	

### A.3 U.S. Flag Marine Safety Office Level Risk-Based Ranking Results

Bin data used in the risk-based ranking for district level data aggregation are shown in Table A.3.1. The risk-based ranking results are shown in Tables A.3.2 through A.3.9 as follows:

- Table A.3.2 - U.S. Flag, MSO, Relative Frequency, Deaths,
- Table A.3.3 - U.S. Flag, MSO, Relative Frequency, Injuries,
- Table A.3.4 - U.S. Flag, MSO, Relative Frequency, Property Loss,
- Table A.3.5 - U.S. Flag, MSO, Relative Frequency, Pollution,
- Table A.3.6 - U.S. Flag, MSO, Casualty Frequency, Deaths,
- Table A.3.7 - U.S. Flag, MSO, Casualty Frequency, Injuries,
- Table A.3.8 - U.S. Flag, MSO, Casualty Frequency, Property Loss,
- Table A.3.9 - U.S. Flag, MSO, Casualty Frequency, Pollution.

Table A.3.1 Risk-Based Ranking Bin Data Summary - Marine Safety Offices, U.S. Flag

Table A.3.1 Risk-Based Ranking Bin Data Summary - Marine Safety Offices, U.S. Flag											
Bin			inspections	casualties	Relative Freq.	Casualty Freq.	Casualty Freq. Standard Deviation	Consequences			
District	MSO	Service						Deaths	injuries	property	pollution
1	BOS	FREIGHTER	10	1	0.0005	0.10000	0.0949	0	0	\$0	5
1	BOS	PASSENGER	207	11	0.0057	0.05314	0.0156	0	4	\$25,400	2
1	BOS	TANKER	20	4	0.0021	0.20000	0.0894	0	0	\$0	1
1	NYC	FREIGHTER	245	100	0.0515	0.40816	0.0314	2	38	\$6,055,882	1648
1	NYC	PASSENGER	759	30	0.0154	0.03953	0.0071	1	6	\$152,700	0
1	NYC	TANKER	230	81	0.0417	0.35217	0.0315	0	31	\$508,900	285
1	POM	FREIGHTER	15		0.0000	0.00000	0.0000	0	0	\$0	0
1	POM	PASSENGER	80	2	0.0010	0.02500	0.0175	0	0	\$200	0
1	POM	TANKER	20	2	0.0010	0.10000	0.0671	0	0	\$6,050	0
1	PRO	FREIGHTER	10	1	0.0005	0.10000	0.0949	0	0	\$0	0
1	PRO	PASSENGER	209	7	0.0036	0.03349	0.0124	0	2	\$15,000	30
1	PRO	TANKER	7		0.0000	0.00000	0.0000	0	0	\$0	0
2	DAV	FREIGHTER			0.0000	NOINSPECTIONS	NOINSPECTIONS	0	0	\$0	0

Table A.3.1 Risk-Based Ranking Bin Data Summary - Marine Safety Offices, U.S. Flag											
Bin			inspections	casualties	Relative Freq.	Casualty Freq.	Casualty Freq. Standard Deviation	Consequences			
District	MSO	Service						Deaths	injuries	property	pollution
2	DAV	PASSENGER	1		0.0000	0.00000	0.0000	0	0	\$0	0
2	DAV	TANKER			0.0000	NOINSPECTIONS	NOINSPECTIONS	0	0	\$0	0
2	HUN	FREIGHTER			0.0000	NOINSPECTIONS	NOINSPECTIONS	0	0	\$0	0
2	HUN	PASSENGER	20	1	0.0005	0.05000	0.0487	0	0	\$0	0
2	HUN	TANKER			0.0000	NOINSPECTIONS	NOINSPECTIONS	0	0	\$0	0
2	LOU	FREIGHTER			0.0000	NOINSPECTIONS	NOINSPECTIONS	0	0	\$0	0
2	LOU	PASSENGER	62	2	0.0010	0.03226	0.0224	0	0	\$92,000	0
2	LOU	TANKER			0.0000	NOINSPECTIONS	NOINSPECTIONS	0	0	\$0	0
2	MEM	FREIGHTER			0.0000	NOINSPECTIONS	NOINSPECTIONS	0	0	\$0	0
2	MEM	PASSENGER	27	2	0.0010	0.07407	0.0504	0	0	\$300	0
2	MEM	TANKER			0.0000	NOINSPECTIONS	NOINSPECTIONS	0	0	\$0	0

Table A.3.1 Risk-Based Ranking Bin Data Summary - Marine Safety Offices, U.S. Flag											
Bin			inspections	casualties	Relative Freq.	Casualty Freq.	Casualty Freq. Standard Deviation	Consequences			
District	MSO	Service						Deaths	injuries	property	pollution
2	NAS	FREIGHTER			0.0000	NOINSPECTIONS	NOINSPECTIONS	0	0	\$0	0
2	NAS	PASSENGER			0.0000	NOINSPECTIONS	NOINSPECTIONS	0	0	\$0	0
2	NAS	TANKER			0.0000	NOINSPECTIONS	NOINSPECTIONS	0	0	\$0	0
2	PAD	FREIGHTER			0.0000	NOINSPECTIONS	NOINSPECTIONS	0	0	\$0	0
2	PAD	PASSENGER	46	1	0.0005	0.02174	0.0215	0	0	\$0	0
2	PAD	TANKER			0.0000	NOINSPECTIONS	NOINSPECTIONS	0	0	\$0	0
2	PIT	FREIGHTER			0.0000	NOINSPECTIONS	NOINSPECTIONS	0	0	\$0	0
2	PIT	PASSENGER	24		0.0000	0.00000	0.0000	0	0	\$0	0
2	PIT	TANKER			0.0000	NOINSPECTIONS	NOINSPECTIONS	0	0	\$0	0
2	SLM	FREIGHTER			0.0000	NOINSPECTIONS	NOINSPECTIONS	0	0	\$0	0
2	SLM	PASSENGER	145	7	0.0036	0.04828	0.0178	0	2	\$1,000	0

Table A.3.1 Risk-Based Ranking Bin Data Summary - Marine Safety Offices, U.S. Flag											
Bin			inspections	casualties	Relative Freq.	Casualty Freq.	Casualty Freq. Standard Deviation	Consequences			
District	MSO	Service						Deaths	injuries	property	pollution
2	SLM	TANKER			0.0000	NOINSPECTIONS	NOINSPECTIONS	0	0	\$0	0
2	STP	FREIGHTER			0.0000	NOINSPECTIONS	NOINSPECTIONS	0	0	\$0	0
2	STP	PASSENGER	8		0.0000	0.00000	0.0000	0	0	\$0	0
2	STP	TANKER			0.0000	NOINSPECTIONS	NOINSPECTIONS	0	0	\$0	0
5	BAL	FREIGHTER	38	10	0.0051	0.26316	0.0714	0	0	\$16,763	13
5	BAL	PASSENGER	66	2	0.0010	0.03030	0.0211	0	0	\$0	0
5	BAL	TANKER	27	1	0.0005	0.03704	0.0363	0	1	\$0	0
5	HMR	FREIGHTER	144	70	0.0360	0.48611	0.0417	0	16	\$1,056,500	3160
5	HMR	PASSENGER	131	15	0.0077	0.11450	0.0278	0	2	\$141,800	0
5	HMR	TANKER	88	44	0.0227	0.50000	0.0533	0	6	\$151,850	146
5	PHI	FREIGHTER	9	3	0.0015	0.33333	0.1571	0	2	\$0	0
5	PHI	PASSENGER	157	6	0.0031	0.03822	0.0153	0	4	\$41,200	0
5	PHI	TANKER	18	3	0.0015	0.16667	0.0878	0	0	\$0	0

Table A.3.1 Risk-Based Ranking Bin Data Summary - Marine Safety Offices, U.S. Flag											
Bin			inspections	casualties	Relative Freq.	Casualty Freq.	Casualty Freq. Standard Deviation	Consequences			
District	MSO	Service						Deaths	injuries	property	pollution
5	WNC	FREIGHTER	13	10	0.0051	0.76923	0.1169	0	1	\$270,000	1
5	WNC	PASSENGER	112	39	0.0201	0.34821	0.0450	0	1	\$60,300	0
5	WNC	TANKER	1		0.0000	0.00000	0.0000	0	0	\$0	0
7	CHA	FREIGHTER	20	6	0.0031	0.30000	0.1025	0	2	\$25,300	0
7	CHA	PASSENGER	37		0.0000	0.00000	0.0000	0	0	\$0	0
7	CHA	TANKER	2		0.0000	0.00000	0.0000	0	0	\$0	0
7	JAC	FREIGHTER	68	49	0.0252	0.72059	0.0544	2	13	\$405,000	140
7	JAC	PASSENGER	76	8	0.0041	0.10526	0.0352	0	5	\$59,000	50
7	JAC	TANKER	16	11	0.0057	0.68750	0.1159	0	2	\$37,250	87
7	MIA	FREIGHTER	29	11	0.0057	0.37931	0.0901	0	1	\$1,128,000	40
7	MIA	PASSENGER	145	5	0.0026	0.03448	0.0152	0	0	\$7,900	11
7	MIA	TANKER	2	1	0.0005	0.50000	0.3536	0	0	\$0	0
7	SAV	FREIGHTER	5		0.0000	0.00000	0.0000	0	0	\$0	0
7	SAV	PASSENGER	42	1	0.0005	0.02381	0.0235	0	0	\$25,000	0
7	SAV	TANKER	2	3	0.0015	1.50000	ERR	0	1	\$0	0

Table A.3.1 Risk-Based Ranking Bin Data Summary - Marine Safety Offices, U.S. Flag											
Bin			inspections	casualties	Relative Freq.	Casualty Freq.	Casualty Freq. Standard Deviation	Consequences			
District	MSO	Service						Deaths	injuries	property	pollution
7	SJP	FREIGHTER	28	8	0.0041	0.28571	0.0854	0	0	\$4,000	0
7	SJP	PASSENGER	108	6	0.0031	0.05556	0.0220	0	0	\$87,300	50
7	SJP	TANKER	25	13	0.0067	0.52000	0.0999	0	6	\$500	426
7	TAM	FREIGHTER	14	1	0.0005	0.07143	0.0688	0	1	\$0	0
7	TAM	PASSENGER	104	4	0.0021	0.03846	0.0189	0	0	\$10,000	1
7	TAM	TANKER	37	30	0.0154	0.81081	0.0644	0	10	\$95,700	1007
8	COR	FREIGHTER	8	8	0.0041	1.00000	0.0000	0	8	\$0	0
8	COR	PASSENGER	25	1	0.0005	0.04000	0.0392	0	0	\$0	0
8	COR	TANKER	25	12	0.0062	0.48000	0.0999	0	3	\$185,160	680
8	GAL	FREIGHTER	46	54	0.0278	1.17391	ERR	1	22	\$341,232	257
8	GAL	PASSENGER	36	2	0.0010	0.05556	0.0382	0	0	\$20	0
8	GAL	TANKER	32	8	0.0041	0.25000	0.0765	0	1	\$0	28
8	HOU	FREIGHTER	45	39	0.0201	0.86667	0.0507	0	14	\$0	13844
8	HOU	PASSENGER	16		0.0000	0.00000	0.0000	0	0	\$0	0
8	HOU	TANKER	30	12	0.0062	0.40000	0.0894	0	1	\$3,613,250	638



Table A.3.1 Risk-Based Ranking Bin Data Summary - Marine Safety Offices, U.S. Flag											
Bin			inspections	casualties	Relative Freq.	Casualty Freq.	Casualty Freq. Standard Deviation	Consequences			
District	MSO	Service						Deaths	injuries	property	pollution
8	MOB	FREIGHTER	42	26	0.0134	0.61905	0.0749	0	6	\$481,100	139
8	MOB	PASSENGER	82	1	0.0005	0.01220	0.0121	0	0	\$0	0
8	MOB	TANKER	42	38	0.0196	0.90476	0.0453	0	9	\$101,700	158
8	MOR	FREIGHTER	16	1	0.0005	0.06250	0.0605	0	0	\$1,500	0
8	MOR	PASSENGER	5		0.0000	0.00000	0.0000	0	0	\$0	0
8	MOR	TANKER	5		0.0000	0.00000	0.0000	0	0	\$0	0
8	NEW	FREIGHTER	133	96	0.0494	0.72180	0.0389	2	42	\$3,092,200	155
8	NEW	PASSENGER	233	9	0.0046	0.03863	0.0126	0	1	\$8,250	0
8	NEW	TANKER	30	16	0.0082	0.53333	0.0911	0	8	\$145,000	21
8	PAT	FREIGHTER	73	27	0.0139	0.36986	0.0565	1	6	\$420,542	118
8	PAT	PASSENGER	15		0.0000	0.00000	0.0000	0	0	\$0	0
8	PAT	TANKER	64	24	0.0124	0.37500	0.0605	0	6	\$20,155	38
9	BUF	FREIGHTER	38	30	0.0154	0.78947	0.0661	0	5	\$196,476	1250
9	BUF	PASSENGER	66	2	0.0010	0.03030	0.0211	0	0	\$5,000	0
9	BUF	TANKER			0.0000	NOINSPECTIONS	NOINSPECTIONS	0	0	\$0	0

Table A.3.1 Risk-Based Ranking Bin Data Summary - Marine Safety Offices, U.S. Flag											
Bin			inspections	casualties	Relative Freq.	Casualty Freq.	Casualty Freq. Standard Deviation	Consequences			
District	MSO	Service						Deaths	injuries	property	pollution
9	CHI	FREIGHTER	6		0.0000	0.00000	0.0000	0	0	\$0	0
9	CHI	PASSENGER	96	2	0.0010	0.02083	0.0146	0	0	\$335,000	5
9	CHI	TANKER	5		0.0000	0.00000	0.0000	0	0	\$0	0
9	CLE	FREIGHTER	21	35	0.0180	1.66667	ERR	1	4	\$1,622,665	310
9	CLE	PASSENGER	20	2	0.0010	0.10000	0.0671	0	0	\$0	0
9	CLE	TANKER			0.0000	NOINSPECTIONS	NOINSPECTIONS	0	0	\$0	0
9	DET	FREIGHTER	16	7	0.0036	0.43750	0.1240	0	0	\$41,500	2
9	DET	PASSENGER	39	6	0.0031	0.15385	0.0578	0	0	\$0	0
9	DET	TANKER	1		0.0000	0.00000	0.0000	0	0	\$0	0
9	DUL	FREIGHTER	56	34	0.0175	0.60714	0.0653	0	5	\$265,500	7
9	DUL	PASSENGER	42		0.0000	0.00000	0.0000	0	0	\$0	0
9	DUL	TANKER	5		0.0000	0.00000	0.0000	0	0	\$0	0
9	MIL	FREIGHTER	31	9	0.0046	0.29032	0.0815	0	2	\$1,076,000	0
9	MIL	PASSENGER	23	1	0.0005	0.04348	0.0425	0	0	\$0	0

Table A.3.1 Risk-Based Ranking Bin Data Summary - Marine Safety Offices, U.S. Flag											
Bin			inspections	casualties	Relative Freq.	Casualty Freq.	Casualty Freq. Standard Deviation	Consequences			
District	MSO	Service						Deaths	injuries	property	pollution
9	MIL	TANKER	1		0.0000	0.00000	0.0000	0	0	\$0	0
9	SIM	FREIGHTER	19	10	0.0051	0.52632	0.1145	0	1	\$95,000	28
9	SIM	PASSENGER	131	2	0.0010	0.01527	0.0107	0	1	\$15,000	0
9	SIM	TANKER			0.0000	NOINSPECTIONS	NOINSPECTIONS	0	0	\$0	0
9	SSM	FREIGHTER			0.0000	NOINSPECTIONS	NOINSPECTIONS	0	0	\$0	0
9	SSM	PASSENGER	6		0.0000	0.00000	0.0000	0	0	\$0	0
9	SSM	TANKER			0.0000	NOINSPECTIONS	NOINSPECTIONS	0	0	\$0	0
9	STB	FREIGHTER	43	25	0.0129	0.58140	0.0752	0	7	\$134,000	7
9	STB	PASSENGER	22	1	0.0005	0.04545	0.0444	0	0	\$0	0
9	STB	TANKER			0.0000	NOINSPECTIONS	NOINSPECTIONS	0	0	\$0	0
9	TOL	FREIGHTER	48	17	0.0088	0.35417	0.0690	0	4	\$1,817,700	400
9	TOL	PASSENGER	66	2	0.0010	0.03030	0.0211	0	0	\$22,000	0
9	TOL	TANKER	12	1	0.0005	0.08333	0.0798	0	0	\$0	0

Table A.3.1 Risk-Based Ranking Bin Data Summary - Marine Safety Offices, U.S. Flag

Bin			inspections	casualties	Relative Freq.	Casualty Freq.	Casualty Freq. Standard Deviation	Consequences			
District	MSO	Service						Deaths	injuries	property	pollution
11	LOS	FREIGHTER	145	96	0.0494	0.66207	0.0393	1	39	\$583,551	99
11	LOS	PASSENGER	208	11	0.0057	0.05288	0.0155	0	1	\$500	12
11	LOS	TANKER	86	63	0.0324	0.73256	0.0477	0	16	\$61,100	223
11	PAC	FREIGHTER			0.0000	NOINSPECTIONS	NOINSPECTIONS	0	0	\$0	0
11	PAC	PASSENGER			0.0000	NOINSPECTIONS	NOINSPECTIONS	0	0	\$0	0
11	PAC	TANKER			0.0000	NOINSPECTIONS	NOINSPECTIONS	0	0	\$0	0
11	SDC	FREIGHTER	13		0.0000	0.00000	0.0000	0	0	\$0	0
11	SDC	PASSENGER	92	6	0.0031	0.06522	0.0257	0	1	\$2,806	10
11	SDC	TANKER	10	2	0.0010	0.20000	0.1265	0	1	\$0	0
11	SFC	FREIGHTER	84	51	0.0263	0.60714	0.0533	0	23	\$3,114,100	330
11	SFC	PASSENGER	230	23	0.0118	0.10000	0.0198	0	0	\$21,500	46
11	SFC	TANKER	51	24	0.0124	0.47059	0.0699	1	2	\$93,946	2636
13	POR	FREIGHTER	43	17	0.0088	0.39535	0.0746	1	2	\$661,000	46

Table A.3.1 Risk-Based Ranking Bin Data Summary - Marine Safety Offices, U.S. Flag												
Bin			inspections	casualties	Relative Freq.	Casualty Freq.	Casualty Freq. Standard Deviation	Consequences				
District	MSO	Service						Deaths	injuries	property	pollution	
13	POR	PASSENGER	17	7	0.0036	0.41176	0.1194	0	0	\$26,500	5	
13	POR	TANKER	102	92	0.0474	0.90196	0.0294	2	21	\$235,121	59	
13	SEA	FREIGHTER	110	77	0.0396	0.70000	0.0437	0	32	\$4,548,350	218	
13	SEA	PASSENGER	264	62	0.0319	0.23485	0.0261	0	15	\$668,875	2	
13	SEA	TANKER	66	38	0.0196	0.57576	0.0608	1	16	\$43,500	110	
13	TAC	FREIGHTER			0.0000	NOINSPECTIONS	NOINSPECTIONS	0	0	\$0	0	
13	TAC	PASSENGER			0.0000	NOINSPECTIONS	NOINSPECTIONS	0	0	\$0	0	
13	TAC	TANKER			0.0000	NOINSPECTIONS	NOINSPECTIONS	0	0	\$0	0	
14	GUA	FREIGHTER	19	2	0.0010	0.10526	0.0704	0	1	\$0	0	
14	GUA	PASSENGER	13		0.0000	0.00000	0.0000	0	0	\$0	0	
14	GUA	TANKER			0.0000	NOINSPECTIONS	NOINSPECTIONS	0	0	\$0	0	
14	HON	FREIGHTER	136	48	0.0247	0.35294	0.0410	0	26	\$54,700	25454	

Table A.3.1 Risk-Based Ranking Bin Data Summary - Marine Safety Offices, U.S. Flag												
Bin			inspections	casualties	Relative Freq.	Casualty Freq.	Casualty Freq. Standard Deviation	Consequences				
District	MSO	Service						Deaths	injuries	property	pollution	
14	HON	PASSENGER	245	33	0.0170	0.13469	0.0218	1	5	\$1,034,020	1010	
14	HON	TANKER	124	96	0.0494	0.77419	0.0375	0	26	\$1,255,300	2056	
17	ANC	FREIGHTER	49	6	0.0031	0.12245	0.0468	0	1	\$200,000	5	
17	ANC	PASSENGER	20	1	0.0005	0.05000	0.0487	0	0	\$600	0	
17	ANC	TANKER	13	1	0.0005	0.07692	0.0739	0	0	\$0	0	
17	JUN	FREIGHTER	27		0.0000	0.00000	0.0000	0	0	\$0	0	
17	JUN	PASSENGER	78	12	0.0062	0.15385	0.0409	0	0	\$4,200	25	
17	JUN	TANKER			0.0000	NOINSPECTIONS	NOINSPECTIONS	0	0	\$0	0	
17	VAL	FREIGHTER	4		0.0000	0.00000	0.0000	0	0	\$0	0	
17	VAL	PASSENGER	21	2	0.0010	0.09524	0.0641	0	0	\$0	0	
17	VAL	TANKER	2		0.0000	0.00000	0.0000	0	0	\$0	0	

Table A.3.2 Risk-Based Rankings - U.S. Flag, MSO, Relative Frequency, Deaths

Table A.3.2 Risk-Based Rankings - U.S. Flag, MSO, Relative Frequency, Deaths											
Bin			Level III Intervention Strategy Importance								
District	MSO	Service	Cargo/Poll.	Steering	Documents	Drills	Auxiliary Sys.	Power Plant	Fire Prevention	Hull	Lifesaving
1	BOS	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1	BOS	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1	BOS	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1	NYC	FREIGHTER	0.0124	0.0134	0.0000	0.0433	0.0000	0.0051	0.0021	0.0021	0.0000
1	NYC	PASSENGER	0.0000	0.0108	0.0000	0.0031	0.0000	0.0000	0.0010	0.0015	0.0000
1	NYC	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1	POM	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1	POM	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1	POM	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1	PRO	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1	PRO	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1	PRO	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	DAV	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	DAV	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	DAV	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	HUN	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	HUN	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Table A.3.2 Risk-Based Rankings - U.S. Flag, MSO, Relative Frequency, Deaths											
Bin			Level III Intervention Strategy Importance								
District	MSO	Service	Cargo/Poll.	Steering	Documents	Drills	Auxiliary Sys.	Power Plant	Fire Prevention	Hull	Lifesaving
2	HUN	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	LOU	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	LOU	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	LOU	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	MEM	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	MEM	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	MEM	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	NAS	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	NAS	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	NAS	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	PAD	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	PAD	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	PAD	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	PIT	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	PIT	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	PIT	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	SLM	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	SLM	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	SLM	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000



Table A.3.2 Risk-Based Rankings - U.S. Flag, MSO, Relative Frequency, Deaths												
Bin			Level III Intervention Strategy Importance									
District	MSO	Service	Cargo/Pol.	Steering	Documents	Drills	Auxiliary Sys.	Power Plant	Fire Prevention	Hull	Lifesaving	
2	STP	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
2	STP	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
2	STP	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
5	BAL	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
5	BAL	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
5	BAL	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
5	HMR	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
5	HMR	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
5	HMR	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
5	PHI	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
5	PHI	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
5	PHI	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
5	WNC	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
5	WNC	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
5	WNC	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
7	CHA	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
7	CHA	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
7	CHA	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
7	JAC	FREIGHTER	0.0051	0.0113	0.0000	0.0154	0.0000	0.0010	0.0010	0.0021	0.0000	

Table A.3.2 Risk-Based Rankings - U.S. Flag, MSO, Relative Frequency, Deaths											
Bin			Level III Intervention Strategy Importance								
District	MSO	Service	Cargo/Poll.	Steering	Documents	Drills	Auxiliary Sys.	Power Plant	Fire Prevention	Hull	Lifesaving
7	JAC	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	JAC	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	MIA	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	MIA	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	MIA	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	SAV	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	SAV	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	SAV	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	SIP	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	SIP	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	SIP	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	TAM	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	TAM	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	TAM	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	COR	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	COR	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	COR	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	GAL	FREIGHTER	0.0026	0.0036	0.0000	0.0118	0.0000	0.0015	0.0000	0.0010	0.0000
8	GAL	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Table A.3.2 Risk-Based Rankings - U.S. Flag, MSO, Relative Frequency, Deaths												
Bin			Level III Intervention Strategy Importance									
District	MSO	Service	Cargo/Poll.	Steering	Documents	Drills	Auxiliary Sys.	Power Plant	Fire Prevention	Hull	Lifesaving	
8	GAL	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
8	HOU	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
8	HOU	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
8	HOU	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
8	MOB	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
8	MOB	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
8	MOB	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
8	MOR	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
8	MOR	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
8	MOR	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
8	NEW	FREIGHTER	0.0093	0.0196	0.0000	0.0463	0.0000	0.0000	0.0000	0.0010	0.0000	
8	NEW	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
8	NEW	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
8	PAT	FREIGHTER	0.0010	0.0036	0.0000	0.0036	0.0000	0.0000	0.0015	0.0000	0.0000	
8	PAT	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
8	PAT	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
9	BUF	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
9	BUF	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
9	BUF	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	

Table A.3.2 Risk-Based Rankings - U.S. Flag, MSO, Relative Frequency, Deaths											
Bin			Level III Intervention Strategy Importance								
District	MSO	Service	Cargo/Poll.	Steering	Documents	Drills	Auxiliary Sys.	Power Plant	Fire Prevention	Hull	Lifesaving
9	CHI	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
9	CHI	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
9	CHI	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
9	CLE	FREIGHTER	0.0021	0.0051	0.0000	0.0036	0.0000	0.0000	0.0010	0.0000	0.0000
9	CLE	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
9	CLE	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
9	DET	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
9	DET	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
9	DET	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
9	DUL	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
9	DUL	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
9	DUL	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
9	MIL	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
9	MIL	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
9	MIL	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
9	SIM	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
9	SIM	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
9	SIM	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
9	SSM	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Table A.3.2 Risk-Based Rankings - U.S. Flag, MSO, Relative Frequency, Deaths											
Bin			Level III Intervention Strategy Importance								
District	MSO	Service	Cargo/Poll.	Steering	Documents	Drills	Auxiliary Sys.	Power Plant	Fire Prevention	Hull	Lifesaving
9	SSM	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
9	SSM	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
9	STB	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
9	STB	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
9	STB	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
9	TOL	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
9	TOL	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
9	TOL	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
11	LOS	FREIGHTER	0.0051	0.0088	0.0000	0.0191	0.0000	0.0026	0.0000	0.0093	0.0000
11	LOS	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
11	LOS	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
11	PAC	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
11	PAC	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
11	PAC	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
11	SDC	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
11	SDC	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
11	SDC	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
11	SFC	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
11	SFC	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Table A.3.2 Risk-Based Rankings - U.S. Flag, MSO, Relative Frequency, Deaths											
Bin			Level III Intervention Strategy Importance								
District	MSO	Service	Cargo/Poll.	Steering	Documents	Drills	Auxiliary Sys.	Power Plant	Fire Prevention	Hull	Lifesaving
11	SFC	TANKER	0.0046	0.0005	0.0000	0.0015	0.0000	0.0000	0.0000	0.0021	0.0000
13	POR	FREIGHTER	0.0036	0.0010	0.0000	0.0015	0.0000	0.0005	0.0005	0.0005	0.0000
13	POR	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
13	POR	TANKER	0.0134	0.0237	0.0000	0.0247	0.0000	0.0010	0.0000	0.0062	0.0000
13	SEA	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
13	SEA	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
13	SEA	TANKER	0.0015	0.0026	0.0000	0.0093	0.0000	0.0005	0.0000	0.0000	0.0000
13	TAC	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
13	TAC	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
13	TAC	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
14	GUA	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
14	GUA	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
14	GUA	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
14	HON	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
14	HON	PASSENGER	0.0010	0.0077	0.0000	0.0031	0.0000	0.0010	0.0005	0.0000	0.0000
14	HON	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
17	ANC	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
17	ANC	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
17	ANC	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Table A.3.2 Risk-Based Rankings - U.S. Flag, MSO, Relative Frequency, Deaths												
Bin			Level III Intervention Strategy Importance									
District	MSO	Service	Cargo/Poll.	Steering	Documents	Drills	Auxiliary Sys.	Power Plant	Fire Prevention	Hull	Lifesaving	
17	JUN	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
17	JUN	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
17	JUN	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
17	VAL	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
17	VAL	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
17	VAL	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	

Table A.3.3 Risk-Based Rankings - U.S. Flag, MSO, Relative Frequency, Injuries

Table A.3.3 Risk-Based Rankings - U.S. Flag, MSO, Relative Frequency, Injuries											
Bin			Level III Intervention Strategy Importance								
District	MSO	Service	Cargo/Poll.	Steering	Documents	Drills	Auxiliary Sys.	Power Plant	Fire Prevention	Hull	Lifesaving
1	BOS	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1	BOS	PASSENGER	0.0021	0.0082	0.0000	0.0103	0.0000	0.0000	0.0000	0.0000	0.0000
1	BOS	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1	NYC	FREIGHTER	0.2348	0.2544	0.0000	0.8218	0.0000	0.0978	0.0391	0.0391	0.0000
1	NYC	PASSENGER	0.0000	0.0649	0.0000	0.0185	0.0000	0.0000	0.0062	0.0093	0.0000
1	NYC	TANKER	0.1596	0.1916	0.0000	0.4789	0.0000	0.0319	0.0160	0.0479	0.0000
1	POM	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1	POM	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1	POM	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1	PRO	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1	PRO	PASSENGER	0.0010	0.0021	0.0000	0.0010	0.0000	0.0000	0.0000	0.0000	0.0000
1	PRO	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	DAV	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	DAV	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	DAV	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	HUN	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	HUN	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000



Table A.3.3 Risk-Based Rankings - U.S. Flag, MSO, Relative Frequency, Injuries											
Bin			Level III Intervention Strategy Importance								
District	MSO	Service	Cargo/Poll.	Steering	Documents	Drills	Auxiliary Sys.	Power Plant	Fire Prevention	Hull	Lifesaing
2	HUN	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	LOU	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	LOU	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	LOU	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	MEM	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	MEM	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	MEM	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	NAS	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	NAS	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	NAS	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	PAD	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	PAD	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	PAD	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	PIT	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	PIT	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	PIT	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	SLM	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	SLM	PASSENGER	0.0000	0.0010	0.0000	0.0021	0.0000	0.0000	0.0000	0.0000	0.0000
2	SLM	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Table A.3.3 Risk-Based Rankings - U.S. Flag, MSO, Relative Frequency, Injuries												
Bin			Level III Intervention Strategy Importance									
District	MSO	Service	Cargo/Poll.	Steering	Documents	Drills	Auxiliary Sys.	Power Plant	Fire Prevention	Hull	Lifesaving	
2	STP	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
2	STP	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
2	STP	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
5	BAL	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
5	BAL	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
5	BAL	TANKER	0.0000	0.0000	0.0000	0.0005	0.0000	0.0000	0.0000	0.0000	0.0000	
5	HMR	FREIGHTER	0.0742	0.0824	0.0000	0.1318	0.0000	0.0577	0.0247	0.0165	0.0000	
5	HMR	PASSENGER	0.0000	0.0072	0.0000	0.0021	0.0000	0.0041	0.0000	0.0021	0.0000	
5	HMR	TANKER	0.0278	0.0216	0.0000	0.0185	0.0000	0.0309	0.0031	0.0000	0.0000	
5	PHI	FREIGHTER	0.0000	0.0000	0.0000	0.0021	0.0000	0.0000	0.0000	0.0000	0.0000	
5	PHI	PASSENGER	0.0000	0.0062	0.0000	0.0021	0.0000	0.0021	0.0000	0.0000	0.0000	
5	PHI	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
5	WNC	FREIGHTER	0.0015	0.0026	0.0000	0.0005	0.0000	0.0000	0.0000	0.0000	0.0000	
5	WNC	PASSENGER	0.0000	0.0093	0.0000	0.0010	0.0000	0.0036	0.0010	0.0015	0.0000	
5	WNC	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
7	CHA	FREIGHTER	0.0010	0.0021	0.0000	0.0021	0.0000	0.0010	0.0000	0.0000	0.0000	
7	CHA	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
7	CHA	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
7	JAC	FREIGHTER	0.0335	0.0736	0.0000	0.1004	0.0000	0.0067	0.0067	0.0134	0.0000	

Table A.3.3 Risk-Based Rankings - U.S. Flag, MSO, Relative Frequency, Injuries												
Bin			Level III Intervention Strategy Importance									
District	MSO	Service	Cargo/Poll.	Steering	Documents	Drills	Auxiliary Sys.	Power Plant	Fire Prevention	Hull	Lifesaving	
7	JAC	PASSENGER	0.0051	0.0103	0.0000	0.0051	0.0000	0.0000	0.0000	0.0026	0.0000	
7	JAC	TANKER	0.0031	0.0031	0.0000	0.0021	0.0000	0.0021	0.0000	0.0000	0.0000	
7	MIA	FREIGHTER	0.0005	0.0026	0.0000	0.0005	0.0000	0.0010	0.0000	0.0000	0.0000	
7	MIA	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
7	MIA	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
7	SAV	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
7	SAV	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
7	SAV	TANKER	0.0000	0.0000	0.0000	0.0005	0.0000	0.0000	0.0000	0.0000	0.0000	
7	SJP	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
7	SJP	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
7	SJP	TANKER	0.0154	0.0031	0.0000	0.0185	0.0000	0.0000	0.0000	0.0000	0.0000	
7	TAM	FREIGHTER	0.0000	0.0000	0.0000	0.0005	0.0000	0.0000	0.0000	0.0000	0.0000	
7	TAM	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
7	TAM	TANKER	0.0412	0.0309	0.0000	0.0515	0.0000	0.0051	0.0051	0.0103	0.0000	
8	COR	FREIGHTER	0.0000	0.0000	0.0000	0.0330	0.0000	0.0000	0.0000	0.0000	0.0000	
8	COR	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
8	COR	TANKER	0.0031	0.0077	0.0000	0.0046	0.0000	0.0000	0.0000	0.0031	0.0000	
8	GAL	FREIGHTER	0.0566	0.0793	0.0000	0.2606	0.0000	0.0340	0.0000	0.0227	0.0000	
8	GAL	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	

Table A.3.3 Risk-Based Rankings - U.S. Flag, MSO, Relative Frequency, Injuries												
Bin			Level III Intervention Strategy Importance									
District	MSO	Service	Cargo/Poll.	Steering	Documents	Drills	Auxiliary Sys.	Power Plant	Fire Prevention	Hull	Lifesaving	
8	GAL	TANKER	0.0010	0.0010	0.0000	0.0005	0.0000	0.0005	0.0000	0.0005	0.0000	
8	HOU	FREIGHTER	0.0288	0.0360	0.0000	0.1081	0.0000	0.0000	0.0000	0.0000	0.0000	
8	HOU	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
8	HOU	TANKER	0.0010	0.0021	0.0000	0.0010	0.0000	0.0000	0.0000	0.0005	0.0000	
8	MOB	FREIGHTER	0.0154	0.0216	0.0000	0.0185	0.0000	0.0031	0.0000	0.0062	0.0000	
8	MOB	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
8	MOB	TANKER	0.0278	0.0742	0.0000	0.0417	0.0000	0.0046	0.0000	0.0000	0.0000	
8	MOR	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
8	MOR	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
8	MOR	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
8	NEW	FREIGHTER	0.1946	0.4109	0.0000	0.9732	0.0000	0.0000	0.0000	0.0216	0.0000	
8	NEW	PASSENGER	0.0000	0.0026	0.0000	0.0005	0.0000	0.0000	0.0000	0.0000	0.0000	
8	NEW	TANKER	0.0082	0.0124	0.0000	0.0330	0.0000	0.0000	0.0000	0.0000	0.0000	
8	PAT	FREIGHTER	0.0062	0.0216	0.0000	0.0216	0.0000	0.0000	0.0093	0.0000	0.0000	
8	PAT	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
8	PAT	TANKER	0.0154	0.0185	0.0000	0.0185	0.0000	0.0000	0.0000	0.0031	0.0000	
9	BUF	FREIGHTER	0.0026	0.0335	0.0000	0.0103	0.0000	0.0103	0.0000	0.0154	0.0000	
9	BUF	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
9	BUF	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	

Table A.3.3 Risk-Based Rankings - U.S. Flag, MSO, Relative Frequency, Injuries												
Bin			Level III Intervention Strategy Importance									
District	MSO	Service	Cargo/Poll.	Steering	Documents	Drills	Auxiliary Sys.	Power Plant	Fire Prevention	Hull	Lifesaving	
9	CHI	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
9	CHI	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
9	CHI	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
9	CLE	FREIGHTER	0.0082	0.0206	0.0000	0.0144	0.0000	0.0000	0.0041	0.0000	0.0000	
9	CLE	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
9	CLE	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
9	DET	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
9	DET	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
9	DET	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
9	DUL	FREIGHTER	0.0180	0.0232	0.0000	0.0154	0.0000	0.0103	0.0000	0.0103	0.0000	
9	DUL	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
9	DUL	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
9	MIL	FREIGHTER	0.0000	0.0021	0.0000	0.0021	0.0000	0.0010	0.0010	0.0000	0.0000	
9	MIL	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
9	MIL	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
9	SIM	FREIGHTER	0.0015	0.0015	0.0000	0.0005	0.0000	0.0005	0.0000	0.0000	0.0000	
9	SIM	PASSENGER	0.0000	0.0005	0.0000	0.0005	0.0000	0.0000	0.0000	0.0000	0.0000	
9	SIM	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
9	SSM	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	

Table A.3.3 Risk-Based Rankings - U.S. Flag, MSO, Relative Frequency, Injuries

Bin			Level III Intervention Strategy Importance								
District	MSO	Service	Cargo/Poll.	Steering	Documents	Drills	Auxiliary Sys.	Power Plant	Fire Prevention	Hull	Lifesaving
9	SSM	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
9	SSM	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
9	STB	FREIGHTER	0.0108	0.0288	0.0000	0.0252	0.0000	0.0000	0.0000	0.0000	0.0000
9	STB	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
9	STB	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
9	TOL	FREIGHTER	0.0041	0.0082	0.0000	0.0082	0.0000	0.0021	0.0000	0.0000	0.0000
9	TOL	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
9	TOL	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
11	LOS	FREIGHTER	0.2008	0.3414	0.0000	0.7430	0.0000	0.1004	0.0000	0.3615	0.0000
11	LOS	PASSENGER	0.0005	0.0036	0.0000	0.0010	0.0000	0.0000	0.0000	0.0000	0.0000
11	LOS	TANKER	0.1483	0.0989	0.0000	0.1318	0.0000	0.0082	0.0082	0.0330	0.0000
11	PAC	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
11	PAC	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
11	PAC	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
11	SDC	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
11	SDC	PASSENGER	0.0005	0.0005	0.0000	0.0005	0.0000	0.0000	0.0000	0.0005	0.0000
11	SDC	TANKER	0.0000	0.0005	0.0000	0.0005	0.0000	0.0000	0.0000	0.0005	0.0000
11	SFC	FREIGHTER	0.0947	0.0592	0.0000	0.2606	0.0000	0.0000	0.0237	0.0355	0.0000
11	SFC	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Table A.3.3 Risk-Based Rankings - U.S. Flag, MSO, Relative Frequency, Injuries												
Bin			Level III Intervention Strategy Importance									
District	MSO	Service	Cargo/Pol.	Steering	Documents	Drills	Auxiliary Sys.	Power Plant	Fire Prevention	Hull	Lifesaving	
11	SFC	TANKER	0.0093	0.0010	0.0000	0.0031	0.0000	0.0000	0.0000	0.0041	0.0000	
13	POR	FREIGHTER	0.0072	0.0021	0.0000	0.0031	0.0000	0.0010	0.0010	0.0010	0.0000	
13	POR	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
13	POR	TANKER	0.1406	0.2487	0.0000	0.2595	0.0000	0.0108	0.0000	0.0649	0.0000	
13	SEA	FREIGHTER	0.1648	0.1813	0.0000	0.5273	0.0000	0.0000	0.0330	0.0330	0.0000	
13	SEA	PASSENGER	0.0154	0.2240	0.0000	0.1159	0.0000	0.0463	0.0232	0.0077	0.0000	
13	SEA	TANKER	0.0247	0.0412	0.0000	0.1483	0.0000	0.0082	0.0000	0.0000	0.0000	
13	TAC	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
13	TAC	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
13	TAC	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
14	GUA	FREIGHTER	0.0000	0.0005	0.0000	0.0005	0.0000	0.0000	0.0000	0.0000	0.0000	
14	GUA	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
14	GUA	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
14	HON	FREIGHTER	0.0268	0.0803	0.0000	0.3481	0.0000	0.0000	0.0000	0.0402	0.0000	
14	HON	PASSENGER	0.0051	0.0386	0.0000	0.0154	0.0000	0.0051	0.0026	0.0000	0.0000	
14	HON	TANKER	0.1473	0.1740	0.0000	0.3481	0.0000	0.0803	0.0402	0.1607	0.0000	
17	ANC	FREIGHTER	0.0015	0.0005	0.0000	0.0005	0.0000	0.0000	0.0000	0.0000	0.0000	
17	ANC	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
17	ANC	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	

Table A.3.3 Risk-Based Rankings - U.S. Flag, MSO, Relative Frequency, Injuries											
Bin			Level III Intervention Strategy Importance								
District	MSO	Service	Cargo/Poll.	Steering	Documents	Drills	Auxiliary Sys.	Power Plant	Fire Prevention	Hull	Lifesaving
17	JUN	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
17	JUN	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
17	JUN	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
17	VAL	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
17	VAL	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
17	VAL	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000



Table A.3.4 Risk-Based Rankings - U.S. Flag, MSO, Relative Frequency, Property Loss

Table A.3.4 Risk-Based Rankings - U.S. Flag, MSO, Relative Frequency, Property Loss											
Bin			Level III Intervention Strategy Importance								
District	MSO	Service	Cargo/Poll.	Steering	Documents	Drills	Auxiliary Sya.	Power Plant	Fire Prevention	Hull	Lifesaving
1	BOS	FREIGHTER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
1	BOS	PASSENGER	\$13	\$52	\$0	\$65	\$0	\$0	\$0	\$0	\$0
1	BOS	TANKER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
1	NYC	FREIGHTER	\$37,420	\$40,539	\$0	\$130,972	\$0	\$15,592	\$6,237	\$6,237	\$0
1	NYC	PASSENGER	\$0	\$1,651	\$0	\$472	\$0	\$0	\$157	\$236	\$0
1	NYC	TANKER	\$2,620	\$3,145	\$0	\$7,861	\$0	\$524	\$262	\$786	\$0
1	POM	FREIGHTER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
1	POM	PASSENGER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
1	POM	TANKER	\$0	\$3	\$0	\$0	\$0	\$0	\$0	\$3	\$0
1	PRO	FREIGHTER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
1	PRO	PASSENGER	\$8	\$15	\$0	\$8	\$0	\$0	\$0	\$0	\$0
1	PRO	TANKER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2	DAV	FREIGHTER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2	DAV	PASSENGER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2	DAV	TANKER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2	HUN	FREIGHTER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2	HUN	PASSENGER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0

Table A.3.4 Risk-Based Rankings - U.S. Flag, MSO, Relative Frequency, Property Loss

Bin			Level III Intervention Strategy Importance								
District	MSO	Service	Cargo/Poll.	Steering	Documents	Drills	Auxiliary Sys.	Power Plant	Fire Prevention	Hull	Lifesaving
2	HUN	TANKER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2	LOU	FREIGHTER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2	LOU	PASSENGER	\$0	\$47	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2	LOU	TANKER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2	MEM	FREIGHTER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2	MEM	PASSENGER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2	MEM	TANKER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2	NAS	FREIGHTER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2	NAS	PASSENGER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2	NAS	TANKER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2	PAD	FREIGHTER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2	PAD	PASSENGER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2	PAD	TANKER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2	PIT	FREIGHTER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2	PIT	PASSENGER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2	PIT	TANKER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2	SLM	FREIGHTER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2	SLM	PASSENGER	\$0	\$1	\$0	\$1	\$0	\$0	\$0	\$0	\$0
2	SLM	TANKER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0

Table A.3.4 Risk-Based Rankings - U.S. Flag, MSO, Relative Frequency, Property Loss

Bin			Level III Intervention Strategy Importance								
District	MSO	Service	Cargo/Pol.	Steering	Documents	Drills	Auxiliary Sys.	Power Plant	Fire Prevention	Hull	Lifesaving
2	STP	FREIGHTER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2	STP	PASSENGER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2	STP	TANKER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
5	BAL	FREIGHTER	\$35	\$60	\$0	\$0	\$0	\$9	\$0	\$0	\$0
5	BAL	PASSENGER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
5	BAL	TANKER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
5	HMR	FREIGHTER	\$4,896	\$5,440	\$0	\$8,704	\$0	\$3,808	\$1,632	\$1,088	\$0
5	HMR	PASSENGER	\$0	\$511	\$0	\$146	\$0	\$292	\$0	\$146	\$0
5	HMR	TANKER	\$704	\$547	\$0	\$469	\$0	\$782	\$78	\$0	\$0
5	PHI	FREIGHTER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
5	PHI	PASSENGER	\$0	\$64	\$0	\$21	\$0	\$21	\$0	\$0	\$0
5	PHI	TANKER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
5	WNC	FREIGHTER	\$417	\$695	\$0	\$139	\$0	\$0	\$0	\$0	\$0
5	WNC	PASSENGER	\$0	\$559	\$0	\$62	\$0	\$217	\$62	\$93	\$0
5	WNC	TANKER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
7	CHA	FREIGHTER	\$13	\$26	\$0	\$26	\$0	\$13	\$0	\$0	\$0
7	CHA	PASSENGER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
7	CHA	TANKER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
7	JAC	FREIGHTER	\$1,043	\$2,294	\$0	\$3,128	\$0	\$209	\$209	\$417	\$0

Table A.3.4 Risk-Based Rankings - U.S. Flag, MSO, Relative Frequency, Property Loss

Bin		Level III Intervention Strategy Importance									
District	MSO	Service	Cargo/Poll.	Steering	Documents	Drills	Auxiliary Sys.	Power Plant	Fire Prevention	Hull	Lifeaving
7	JAC	PASSENGER	\$61	\$122	\$0	\$61	\$0	\$0	\$0	\$30	\$0
7	JAC	TANKER	\$58	\$58	\$0	\$38	\$0	\$38	\$0	\$0	\$0
7	MIA	FREIGHTER	\$581	\$2,904	\$0	\$581	\$0	\$1,162	\$0	\$0	\$0
7	MIA	PASSENGER	\$4	\$16	\$0	\$0	\$0	\$0	\$0	\$0	\$0
7	MIA	TANKER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
7	SAV	FREIGHTER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
7	SAV	PASSENGER	\$0	\$0	\$0	\$0	\$0	\$13	\$13	\$0	\$0
7	SAV	TANKER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
7	SJP	FREIGHTER	\$0	\$6	\$0	\$0	\$0	\$2	\$0	\$0	\$0
7	SJP	PASSENGER	\$45	\$315	\$0	\$0	\$0	\$0	\$0	\$0	\$0
7	SJP	TANKER	\$1	\$0	\$0	\$2	\$0	\$0	\$0	\$0	\$0
7	TAM	FREIGHTER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
7	TAM	PASSENGER	\$5	\$10	\$0	\$0	\$0	\$0	\$0	\$0	\$0
7	TAM	TANKER	\$394	\$296	\$0	\$493	\$0	\$49	\$49	\$99	\$0
8	COR	FREIGHTER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
8	COR	PASSENGER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
8	COR	TANKER	\$191	\$477	\$0	\$286	\$0	\$0	\$0	\$191	\$0
8	GAL	FREIGHTER	\$879	\$1,230	\$0	\$4,041	\$0	\$527	\$0	\$351	\$0
8	GAL	PASSENGER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0

Table A.3.4 Risk-Based Rankings - U.S. Flag, MSO, Relative Frequency, Property Loss

Bin			Level III Intervention Strategy Importance								
District	MSO	Service	Cargo/Poll.	Steering	Documents	Drills	Auxiliary Sys.	Power Plant	Fire Prevention	Hull	Lifesaving
8	GAL	TANKER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
8	HOU	FREIGHTER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
8	HOU	PASSENGER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
8	HOU	TANKER	\$3,721	\$7,442	\$0	\$3,721	\$0	\$0	\$0	\$1,861	\$0
8	MOB	FREIGHTER	\$1,239	\$1,734	\$0	\$1,486	\$0	\$248	\$0	\$495	\$0
8	MOB	PASSENGER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
8	MOB	TANKER	\$314	\$838	\$0	\$471	\$0	\$52	\$0	\$0	\$0
8	MOR	FREIGHTER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
8	MOR	PASSENGER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
8	MOR	TANKER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
8	NEW	FREIGHTER	\$14,330	\$30,253	\$0	\$71,652	\$0	\$0	\$0	\$1,592	\$0
8	NEW	PASSENGER	\$0	\$21	\$0	\$4	\$0	\$0	\$0	\$0	\$0
8	NEW	TANKER	\$149	\$224	\$0	\$597	\$0	\$0	\$0	\$0	\$0
8	PAT	FREIGHTER	\$433	\$1,516	\$0	\$1,516	\$0	\$0	\$650	\$0	\$0
8	PAT	PASSENGER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
8	PAT	TANKER	\$52	\$62	\$0	\$62	\$0	\$0	\$0	\$10	\$0
9	BUF	FREIGHTER	\$101	\$1,315	\$0	\$405	\$0	\$405	\$0	\$607	\$0
9	BUF	PASSENGER	\$0	\$3	\$0	\$0	\$0	\$0	\$0	\$0	\$0
9	BUF	TANKER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0

Table A.3.4 Risk-Based Rankings - U.S. Flag, MSO, Relative Frequency, Property Loss

Bin			Level III Intervention Strategy Importance								
District	MSO	Service	Cargo/Poll.	Steering	Documents	Drills	Auxiliary Sys.	Power Plant	Fire Prevention	Hull	Lifesaving
9	CHI	FREIGHTER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
9	CHI	PASSENGER	\$173	\$173	\$0	\$0	\$0	\$0	\$0	\$173	\$0
9	CHI	TANKER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
9	CLE	FREIGHTER	\$3,342	\$8,356	\$0	\$5,849	\$0	\$0	\$1,671	\$0	\$0
9	CLE	PASSENGER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
9	CLE	TANKER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
9	DET	FREIGHTER	\$43	\$43	\$0	\$0	\$0	\$0	\$0	\$21	\$0
9	DET	PASSENGER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
9	DET	TANKER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
9	DUL	FREIGHTER	\$957	\$1,230	\$0	\$820	\$0	\$547	\$0	\$547	\$0
9	DUL	PASSENGER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
9	DUL	TANKER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
9	MIL	FREIGHTER	\$0	\$1,108	\$0	\$1,108	\$0	\$554	\$554	\$0	\$0
9	MIL	PASSENGER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
9	MIL	TANKER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
9	SIM	FREIGHTER	\$147	\$147	\$0	\$49	\$0	\$49	\$0	\$0	\$0
9	SIM	PASSENGER	\$0	\$8	\$0	\$8	\$0	\$0	\$0	\$0	\$0
9	SIM	TANKER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
9	SSM	FREIGHTER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0

Table A.3.4 Risk-Based Rankings - U.S. Flag, MSO, Relative Frequency, Property Loss											
Bin			Level III Intervention Strategy Importance								
District	MSO	Service	Cargo/Poll.	Steering	Documents	Drills	Auxiliary Sys.	Power Plant	Fire Prevention	Hull	Liferaaving
9	SSM	PASSENGER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
9	SSM	TANKER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
9	STB	FREIGHTER	\$207	\$552	\$0	\$483	\$0	\$0	\$0	\$0	\$0
9	STB	PASSENGER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
9	STB	TANKER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
9	TOL	FREIGHTER	\$1,872	\$3,744	\$0	\$3,744	\$0	\$936	\$0	\$0	\$0
9	TOL	PASSENGER	\$0	\$23	\$0	\$0	\$0	\$0	\$0	\$0	\$0
9	TOL	TANKER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
11	LOS	FREIGHTER	\$3,005	\$5,108	\$0	\$11,118	\$0	\$1,502	\$0	\$5,409	\$0
11	LOS	PASSENGER	\$0	\$2	\$0	\$1	\$0	\$0	\$0	\$0	\$0
11	LOS	TANKER	\$566	\$378	\$0	\$503	\$0	\$31	\$31	\$126	\$0
11	PAC	FREIGHTER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
11	PAC	PASSENGER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
11	PAC	TANKER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
11	SDC	FREIGHTER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
11	SDC	PASSENGER	\$1	\$1	\$0	\$1	\$0	\$0	\$0	\$1	\$0
11	SDC	TANKER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
11	SFC	FREIGHTER	\$12,828	\$8,018	\$0	\$35,278	\$0	\$0	\$3,207	\$4,811	\$0
11	SFC	PASSENGER	\$66	\$66	\$0	\$0	\$0	\$11	\$0	\$44	\$0

Table A.3.4 Risk-Based Rankings - U.S. Flag, MSO, Relative Frequency, Property Loss

Bin			Level III Intervention Strategy Importance								
District	MSO	Service	Cargo/Poll.	Steering	Documents	Drills	Auxiliary Sys.	Power Plant	Fire Prevention	Hull	Lifesaving
11	SFC	TANKER	\$435	\$48	\$0	\$145	\$0	\$0	\$0	\$194	\$0
13	POR	FREIGHTER	\$2,383	\$681	\$0	\$1,021	\$0	\$340	\$340	\$340	\$0
13	POR	PASSENGER	\$14	\$27	\$0	\$0	\$0	\$0	\$0	\$14	\$0
13	POR	TANKER	\$1,574	\$2,785	\$0	\$2,906	\$0	\$121	\$0	\$726	\$0
13	SEA	FREIGHTER	\$23,421	\$25,763	\$0	\$74,947	\$0	\$0	\$4,684	\$4,684	\$0
13	SEA	PASSENGER	\$689	\$9,988	\$0	\$5,166	\$0	\$2,067	\$1,033	\$344	\$0
13	SEA	TANKER	\$67	\$112	\$0	\$403	\$0	\$22	\$0	\$0	\$0
13	TAC	FREIGHTER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
13	TAC	PASSENGER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
13	TAC	TANKER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
14	GUA	FREIGHTER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
14	GUA	PASSENGER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
14	GUA	TANKER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
14	HON	FREIGHTER	\$56	\$169	\$0	\$732	\$0	\$0	\$0	\$85	\$0
14	HON	PASSENGER	\$1,065	\$7,987	\$0	\$3,195	\$0	\$1,065	\$532	\$0	\$0
14	HON	TANKER	\$7,110	\$8,403	\$0	\$16,806	\$0	\$3,878	\$1,939	\$7,757	\$0
17	ANC	FREIGHTER	\$309	\$103	\$0	\$103	\$0	\$0	\$0	\$0	\$0
17	ANC	PASSENGER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
17	ANC	TANKER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0



Table A.3.4 Risk-Based Rankings - U.S. Flag, MSO, Relative Frequency, Property Loss												
Bin			Level III Intervention Strategy Importance									
District	MSO	Service	Cargo/Polli.	Steering	Documents	Drills	Auxiliary Sya.	Power Plant	Fire Prevention	Hull	Lifesaving	
17	JUN	FREIGHTER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
17	JUN	PASSENGER	\$2	\$11	\$0	\$0	\$0	\$6	\$0	\$0	\$0	
17	JUN	TANKER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
17	VAL	FREIGHTER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
17	VAL	PASSENGER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
17	VAL	TANKER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	

Table A.3.5 Risk-Based Rankings - U.S. Flag, MSO, Relative Frequency, Pollution

Table A.3.5 Risk-Based Rankings - U.S. Flag, MSO, Relative Frequency, Pollution											
Bin			Level III Intervention Strategy Importance								
District	MSO	Service	Cargo/Poll.	Steering	Documents	Drills	Auxiliary Sys.	Power Plant	Fire Prevention	Hull	Lifeaving
1	BOS	FREIGHTER	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1	BOS	PASSENGER	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00
1	BOS	TANKER	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1	NYC	FREIGHTER	10.18	11.03	0.00	35.64	0.00	4.24	1.70	1.70	0.00
1	NYC	PASSENGER	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1	NYC	TANKER	1.47	1.76	0.00	4.40	0.00	0.29	0.15	0.44	0.00
1	POM	FREIGHTER	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1	POM	PASSENGER	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1	POM	TANKER	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1	PRO	FREIGHTER	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1	PRO	PASSENGER	0.02	0.03	0.00	0.02	0.00	0.00	0.00	0.00	0.00
1	PRO	TANKER	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2	DAV	FREIGHTER	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2	DAV	PASSENGER	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2	DAV	TANKER	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2	HUN	FREIGHTER	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2	HUN	PASSENGER	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Table A.3.5 Risk-Based Rankings - U.S. Flag, MSO, Relative Frequency, Pollution												
Bin			Level III Intervention Strategy Importance									
District	MSO	Service	Cargo/Poll.	Steering	Documents	Drills	Auxiliary Sys.	Power Plant	Fire Prevention	Hull	Lifeaving	
2	HUN	TANKER	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2	LOU	FREIGHTER	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2	LOU	PASSENGER	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2	LOU	TANKER	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2	MEM	FREIGHTER	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2	MEM	PASSENGER	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2	MEM	TANKER	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2	NAS	FREIGHTER	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2	NAS	PASSENGER	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2	NAS	TANKER	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2	PAD	FREIGHTER	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2	PAD	PASSENGER	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2	PAD	TANKER	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2	PIT	FREIGHTER	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2	PIT	PASSENGER	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2	PIT	TANKER	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2	SLM	FREIGHTER	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2	SLM	PASSENGER	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2	SLM	TANKER	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	

Table A.3.5 Risk-Based Rankings - U.S. Flag, MSO, Relative Frequency, Pollution

Bin			Level III Intervention Strategy Importance								
District	MSO	Service	Cargo/Poll.	Steering	Documents	Drills	Auxiliary Sys.	Power Plant	Fire Prevention	Hull	Lifesaving
2	STP	FREIGHTER	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2	STP	PASSENGER	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2	STP	TANKER	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5	BAL	FREIGHTER	0.03	0.05	0.00	0.00	0.00	0.01	0.00	0.00	0.00
5	BAL	PASSENGER	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5	BAL	TANKER	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5	HMR	FREIGHTER	14.64	16.27	0.00	26.04	0.00	11.39	4.88	3.25	0.00
5	HMR	PASSENGER	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5	HMR	TANKER	0.68	0.53	0.00	0.45	0.00	0.75	0.08	0.00	0.00
5	PHI	FREIGHTER	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5	PHI	PASSENGER	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5	PHI	TANKER	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5	WNC	FREIGHTER	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5	WNC	PASSENGER	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5	WNC	TANKER	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
7	CHA	FREIGHTER	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
7	CHA	PASSENGER	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
7	CHA	TANKER	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
7	JAC	FREIGHTER	0.36	0.79	0.00	1.08	0.00	0.07	0.07	0.14	0.00

Table A.3.5 Risk-Based Rankings - U.S. Flag, MSO, Relative Frequency, Pollution												
Bin			Level III Intervention Strategy Importance									
District	MSO	Service	Cargo/Poll.	Steering	Documents	Drills	Auxiliary Sys.	Power Plant	Fire Prevention	Hull	Lifesaving	
7	JAC	PASSENGER	0.05	0.10	0.00	0.05	0.00	0.00	0.00	0.03	0.00	
7	JAC	TANKER	0.13	0.13	0.00	0.09	0.00	0.09	0.00	0.00	0.00	
7	MIA	FREIGHTER	0.02	0.10	0.00	0.02	0.00	0.04	0.00	0.00	0.00	
7	MIA	PASSENGER	0.01	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
7	MIA	TANKER	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
7	SAV	FREIGHTER	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
7	SAV	PASSENGER	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
7	SAV	TANKER	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
7	SIP	FREIGHTER	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
7	SIP	PASSENGER	0.03	0.18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
7	SIP	TANKER	1.10	0.22	0.00	1.32	0.00	0.00	0.00	0.00	0.00	
7	TAM	FREIGHTER	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
7	TAM	PASSENGER	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
7	TAM	TANKER	4.15	3.11	0.00	5.19	0.00	0.52	0.52	1.04	0.00	
8	COR	FREIGHTER	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
8	COR	PASSENGER	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
8	COR	TANKER	0.70	1.75	0.00	1.05	0.00	0.00	0.00	0.70	0.00	
8	GAL	FREIGHTER	0.66	0.93	0.00	3.04	0.00	0.40	0.00	0.26	0.00	
8	GAL	PASSENGER	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	

Table A.3.5 Risk-Based Rankings - U.S. Flag, MSO, Relative Frequency, Pollution

Bin				Level III Intervention Strategy Importance									
District	MSO	Service	Cargo/Poll.	Steering	Documents	Drills	Auxiliary Sys.	Power Plant	Fire Prevention	Hull	Lifesaving		
8	GAL	TANKER	0.03	0.03	0.00	0.01	0.00	0.01	0.00	0.01	0.00		
8	HOU	FREIGHTER	28.51	35.64	0.00	106.93	0.00	0.00	0.00	0.00	0.00		
8	HOU	PASSENGER	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
8	HOU	TANKER	0.66	1.31	0.00	0.66	0.00	0.00	0.00	0.33	0.00		
8	MOB	FREIGHTER	0.36	0.50	0.00	0.43	0.00	0.07	0.00	0.14	0.00		
8	MOB	PASSENGER	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
8	MOB	TANKER	0.49	1.30	0.00	0.73	0.00	0.08	0.00	0.00	0.00		
8	MOR	FREIGHTER	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
8	MOR	PASSENGER	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
8	MOR	TANKER	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
8	NEW	FREIGHTER	0.72	1.52	0.00	3.59	0.00	0.00	0.00	0.08	0.00		
8	NEW	PASSENGER	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
8	NEW	TANKER	0.02	0.03	0.00	0.09	0.00	0.00	0.00	0.00	0.00		
8	PAT	FREIGHTER	0.12	0.43	0.00	0.43	0.00	0.00	0.18	0.00	0.00		
8	PAT	PASSENGER	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
8	PAT	TANKER	0.10	0.12	0.00	0.12	0.00	0.00	0.00	0.02	0.00		
9	BUF	FREIGHTER	0.64	8.37	0.00	2.57	0.00	2.57	0.00	3.86	0.00		
9	BUF	PASSENGER	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
9	BUF	TANKER	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		

Table A.3.5 Risk-Based Rankings - U.S. Flag, MSO, Relative Frequency, Pollution

Table A.3.5 Risk-Based Rankings - U.S. Flag, MSO, Relative Frequency, Pollution											
Bin			Level III Intervention Strategy Importance								
District	MSO	Service	Cargo/Poll.	Steering	Documents	Drills	Auxiliary Sys.	Power Plant	Fire Prevention	Hull	Lifesaving
9	CHI	FREIGHTER	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
9	CHI	PASSENGER	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
9	CHI	TANKER	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
9	CLE	FREIGHTER	0.64	1.60	0.00	1.12	0.00	0.00	0.32	0.00	0.00
9	CLE	PASSENGER	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
9	CLE	TANKER	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
9	DET	FREIGHTER	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
9	DET	PASSENGER	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
9	DET	TANKER	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
9	DUL	FREIGHTER	0.03	0.03	0.00	0.02	0.00	0.01	0.00	0.01	0.00
9	DUL	PASSENGER	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
9	DUL	TANKER	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
9	MIL	FREIGHTER	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
9	MIL	PASSENGER	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
9	MIL	TANKER	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
9	SIM	FREIGHTER	0.04	0.04	0.00	0.01	0.00	0.01	0.00	0.00	0.00
9	SIM	PASSENGER	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
9	SIM	TANKER	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
9	SSM	FREIGHTER	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Table A.3.5 Risk-Based Rankings - U.S. Flag, MSO, Relative Frequency, Pollution

Bin			Level III Intervention Strategy Importance								
District	MSO	Service	Cargo/Poll.	Steering	Documents	Drills	Auxiliary Sys.	Power Plant	Fire Prevention	Hull	Lifesaving
9	SSM	PASSENGER	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
9	SSM	TANKER	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
9	STB	FREIGHTER	0.01	0.03	0.00	0.03	0.00	0.00	0.00	0.00	0.00
9	STB	PASSENGER	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
9	STB	TANKER	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
9	TOL	FREIGHTER	0.41	0.82	0.00	0.82	0.00	0.21	0.00	0.00	0.00
9	TOL	PASSENGER	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
9	TOL	TANKER	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
11	LOS	FREIGHTER	0.51	0.87	0.00	1.89	0.00	0.25	0.00	0.92	0.00
11	LOS	PASSENGER	0.01	0.04	0.00	0.01	0.00	0.00	0.00	0.00	0.00
11	LOS	TANKER	2.07	1.38	0.00	1.84	0.00	0.11	0.11	0.46	0.00
11	PAC	FREIGHTER	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
11	PAC	PASSENGER	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
11	PAC	TANKER	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
11	SDC	FREIGHTER	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
11	SDC	PASSENGER	0.01	0.01	0.00	0.01	0.00	0.00	0.00	0.01	0.00
11	SDC	TANKER	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
11	SFC	FREIGHTER	1.36	0.85	0.00	3.74	0.00	0.00	0.34	0.51	0.00
11	SFC	PASSENGER	0.14	0.14	0.00	0.00	0.00	0.02	0.00	0.09	0.00



Table A.3.5 Risk-Based Rankings - U.S. Flag, MSO, Relative Frequency, Pollution												
Bin			Level III Intervention Strategy Importance									
District	MSO	Service	Cargo/Poll.	Steering	Documents	Drills	Auxiliary Sys.	Power Plant	Fire Prevention	Hull	Lifesaving	
11	SFC	TANKER	12.22	1.36	0.00	4.07	0.00	0.00	0.00	5.43	0.00	
13	POR	FREIGHTER	0.17	0.05	0.00	0.07	0.00	0.02	0.02	0.02	0.00	
13	POR	PASSENGER	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
13	POR	TANKER	0.39	0.70	0.00	0.73	0.00	0.03	0.00	0.18	0.00	
13	SEA	FREIGHTER	1.12	1.23	0.00	3.59	0.00	0.00	0.22	0.22	0.00	
13	SEA	PASSENGER	0.00	0.03	0.00	0.02	0.00	0.01	0.00	0.00	0.00	
13	SEA	TANKER	0.17	0.28	0.00	1.02	0.00	0.06	0.00	0.00	0.00	
13	TAC	FREIGHTER	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
13	TAC	PASSENGER	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
13	TAC	TANKER	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
14	GUA	FREIGHTER	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
14	GUA	PASSENGER	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
14	GUA	TANKER	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
14	HON	FREIGHTER	26.21	78.64	0.00	340.78	0.00	0.00	0.00	39.32	0.00	
14	HON	PASSENGER	1.04	7.80	0.00	3.12	0.00	1.04	0.52	0.00	0.00	
14	HON	TANKER	11.65	13.76	0.00	27.53	0.00	6.35	3.18	12.70	0.00	
17	ANC	FREIGHTER	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
17	ANC	PASSENGER	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
17	ANC	TANKER	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	

Table A.3.5 Risk-Based Rankings - U.S. Flag, MSO, Relative Frequency, Pollution												
Bin			Level III Intervention Strategy Importance									
District	MSO	Service	Cargo/Poll.	Steering	Documents	Drills	Auxiliary Sys.	Power Plant	Fire Prevention	Hull	Liferaaving	
17	JUN	FREIGHTER	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
17	JUN	PASSENGER	0.01	0.06	0.00	0.00	0.00	0.04	0.00	0.00	0.00	
17	JUN	TANKER	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
17	VAL	FREIGHTER	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
17	VAL	PASSENGER	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
17	VAL	TANKER	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	

Table A.3.6 Risk-Based Rankings - U.S. Flag, MSO, Casualty Frequency, Deaths

Table A.3.6 Risk-Based Rankings - U.S. Flag, MSO, Casualty Frequency, Deaths											
Bin			Level III Intervention Strategy Importance								
District	MSO	Service	Cargo/Poll.	Steering	Documents	Drills	Auxiliary Sys.	Power Plant	Fire Prevention	Hull	Lifesaving
1	BOS	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1	BOS	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1	BOS	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1	NYC	FREIGHTER	0.0980	0.1061	0.0000	0.3429	0.0000	0.0408	0.0163	0.0163	0.0000
1	NYC	PASSENGER	0.0000	0.0277	0.0000	0.0079	0.0000	0.0000	0.0026	0.0040	0.0000
1	NYC	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1	POM	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1	POM	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1	POM	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1	PRO	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1	PRO	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1	PRO	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	DAV	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	DAV	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	DAV	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	HUN	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	HUN	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Table A.3.6 Risk-Based Rankings - U.S. Flag, MSO, Casualty Frequency, Deaths

Bin			Level III Intervention Strategy Importance								
District	MSO	Service	Cargo/Pol.	Steering	Documents	Drills	Auxiliary Sys.	Power Plant	Fire Prevention	Hull	Lifesaving
2	HUN	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	LOU	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	LOU	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	LOU	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	MEM	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	MEM	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	MEM	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	NAS	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	NAS	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	NAS	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	PAD	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	PAD	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	PAD	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	PIT	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	PIT	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	PIT	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	SLM	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	SLM	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	SLM	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Table A.3.6 Risk-Based Rankings - U.S. Flag, MSO, Casualty Frequency, Deaths

Table A.3.6 Risk-Based Rankings - U.S. Flag, MSO, Casualty Frequency, Deaths											
Bin			Level III Intervention Strategy Importance								
District	MSO	Service	Cargo/Pol.	Steering	Documents	Drills	Auxiliary Sys.	Power Plant	Fire Prevention	Hull	Lifesaving
2	STP	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	STP	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	STP	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5	BAL	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5	BAL	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5	BAL	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5	HMR	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5	HMR	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5	HMR	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5	PHI	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5	PHI	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5	PHI	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5	WNC	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5	WNC	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5	WNC	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	CHA	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	CHA	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	CHA	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	JAC	FREIGHTER	0.1471	0.3235	0.0000	0.4412	0.0000	0.0294	0.0294	0.0588	0.0000

Table A.3.6 Risk-Based Rankings - U.S. Flag, MSO, Casualty Frequency, Deaths												
Bin			Level III Intervention Strategy Importance									
District	MSO	Service	Cargo/Pol.	Steering	Documents	Drills	Auxiliary Sys.	Power Plant	Fire Prevention	Hull	Lifesaving	
7	JAC	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
7	JAC	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
7	MIA	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
7	MIA	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
7	MIA	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
7	SAV	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
7	SAV	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
7	SAV	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
7	SIP	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
7	SIP	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
7	SIP	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
7	TAM	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
7	TAM	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
7	TAM	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
8	COR	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
8	COR	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
8	COR	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
8	GAL	FREIGHTER	0.1087	0.1522	0.0000	0.5000	0.0000	0.0652	0.0000	0.0435	0.0000	
8	GAL	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	

Table A.3.6 Risk-Based Rankings - U.S. Flag, MSO, Casualty Frequency, Deaths											
Bin			Level III Intervention Strategy Importance								
District	MSO	Service	Cargo/Poll.	Steering	Documents	Drills	Auxiliary Sys.	Power Plant	Fire Prevention	Hull	Lifesaving
8	GAL	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	HOU	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	HOU	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	HOU	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	MOB	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	MOB	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	MOB	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	MOR	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	MOR	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	MOR	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	NEW	FREIGHTER	0.1353	0.2857	0.0000	0.6767	0.0000	0.0000	0.0000	0.0150	0.0000
8	NEW	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	NEW	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	PAT	FREIGHTER	0.0274	0.0959	0.0000	0.0959	0.0000	0.0000	0.0411	0.0000	0.0000
8	PAT	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	PAT	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
9	BUF	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
9	BUF	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
9	BUF	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Table A.3.6 Risk-Based Rankings - U.S. Flag, MSO, Casualty Frequency, Deaths												
Bin			Level III Intervention Strategy Importance									
District	MSO	Service	Cargo/Poll.	Steering	Documents	Drills	Auxiliary Sys.	Power Plant	Fire Prevention	Hull	Lifesaving	
9	CHI	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
9	CHI	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
9	CHI	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
9	CLE	FREIGHTER	0.1905	0.4762	0.0000	0.3333	0.0000	0.0000	0.0952	0.0000	0.0000	
9	CLE	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
9	CLE	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
9	DET	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
9	DET	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
9	DET	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
9	DUL	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
9	DUL	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
9	DUL	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
9	MIL	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
9	MIL	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
9	MIL	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
9	SIM	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
9	SIM	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
9	SIM	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
9	SSM	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	



Table A.3.6 Risk-Based Rankings - U.S. Flag, MSO, Casualty Frequency, Deaths

Bin			Level III Intervention Strategy Importance								
District	MSO	Service	Cargo/Pol.	Steering	Documents	Drills	Auxiliary Sys.	Power Plant	Fire Prevention	Hull	Liferaising
9	SSM	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
9	SSM	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
9	STB	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
9	STB	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
9	STB	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
9	TOL	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
9	TOL	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
9	TOL	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
11	LOS	FREIGHTER	0.0690	0.1172	0.0000	0.2552	0.0000	0.0345	0.0000	0.1241	0.0000
11	LOS	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
11	LOS	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
11	PAC	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
11	PAC	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
11	PAC	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
11	SDC	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
11	SDC	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
11	SDC	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
11	SFC	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
11	SFC	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Table A.3.6 Risk-Based Rankings - U.S. Flag, MSO, Casualty Frequency, Deaths

Bin				Level III Intervention Strategy Importance									
District	MSO	Service	Cargo/Poll.	Steering	Documents	Drills	Auxiliary Sys.	Power Plant	Fire Prevention	Hull	Lifesaving		
11	SFC	TANKER	0.1765	0.0196	0.0000	0.0588	0.0000	0.0000	0.0000	0.0784	0.0000		
13	POR	FREIGHTER	0.1628	0.0465	0.0000	0.0698	0.0000	0.0233	0.0233	0.0233	0.0000		
13	POR	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		
13	POR	TANKER	0.2549	0.4510	0.0000	0.4706	0.0000	0.0196	0.0000	0.1176	0.0000		
13	SEA	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		
13	SEA	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		
13	SEA	TANKER	0.0455	0.0758	0.0000	0.2727	0.0000	0.0152	0.0000	0.0000	0.0000		
13	TAC	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		
13	TAC	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		
13	TAC	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		
14	GUA	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		
14	GUA	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		
14	GUA	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		
14	HON	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		
14	HON	PASSENGER	0.0082	0.0612	0.0000	0.0245	0.0000	0.0082	0.0041	0.0000	0.0000		
14	HON	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		
17	ANC	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		
17	ANC	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		
17	ANC	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		

Table A.3.6 Risk-Based Rankings - U.S. Flag, MSO, Casualty Frequency, Deaths

Bin			Level III Intervention Strategy Importance								
District	MSO	Service	Cargo/Poll.	Steering	Documents	Drills	Auxiliary Sys.	Power Plant	Fire Prevention	Hull	Liferaiving
17	JUN	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
17	JUN	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
17	JUN	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
17	VAL	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
17	VAL	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
17	VAL	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Table A.3.7 Risk-Based Rankings - U.S. Flag, MSO, Casualty Frequency, Injuries

Table A.3.7 Risk-Based Rankings - U.S. Flag, MSO, Casualty Frequency, Injuries											
Bin			Level III Intervention Strategy Importance								
District	MSO	Service	Cargo/Poll.	Steering	Documents	Drills	Auxiliary Sys.	Power Plant	Fire Prevention	Hull	Lifesaving
1	BOS	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1	BOS	PASSENGER	0.0193	0.0773	0.0000	0.0966	0.0000	0.0000	0.0000	0.0000	0.0000
1	BOS	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1	NYC	FREIGHTER	1.8612	2.0163	0.0000	6.5143	0.0000	0.7755	0.3102	0.3102	0.0000
1	NYC	PASSENGER	0.0000	0.1660	0.0000	0.0474	0.0000	0.0000	0.0158	0.0237	0.0000
1	NYC	TANKER	1.3478	1.6174	0.0000	4.0435	0.0000	0.2696	0.1348	0.4043	0.0000
1	POM	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1	POM	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1	POM	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1	PRO	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1	PRO	PASSENGER	0.0096	0.0191	0.0000	0.0096	0.0000	0.0000	0.0000	0.0000	0.0000
1	PRO	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	DAV	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	DAV	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	DAV	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	HUN	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	HUN	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Table A.3.7 Risk-Based Rankings - U.S. Flag, MSO, Casualty Frequency, Injuries

Bin			Level III Intervention Strategy Importance								
District	MSO	Service	Cargo/Poll.	Steering	Documents	Drills	Auxiliary Sys.	Power Plant	Fire Prevention	Hull	Lifesaving
2	HUN	TANKER	0.0000	0.0000	0.0000	0.0000	0.0030	0.0000	0.0000	0.0000	0.0000
2	LOU	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	LOU	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	LOU	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	MEM	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	MEM	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	MEM	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	NAS	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	NAS	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	NAS	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	PAD	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	PAD	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	PAD	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	PIT	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	PIT	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	PIT	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	SLM	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	SLM	PASSENGER	0.0000	0.0138	0.0000	0.0276	0.0000	0.0000	0.0000	0.0000	0.0000
2	SLM	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Table A.3.7 Risk-Based Rankings - U.S. Flag, MSO, Casualty Frequency, Injuries

Table A.3.7 Risk-Based Rankings - U.S. Flag, MSO, Casualty Frequency, Injuries											
Bin			Level III Intervention Strategy Importance								
District	MSO	Service	Cargo/Poll.	Steering	Documents	Drills	Auxiliary Sys.	Power Plant	Fire Prevention	Hull	Lifesaving
2	STP	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	STP	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	STP	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5	BAL	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5	BAL	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5	BAL	TANKER	0.0000	0.0000	0.0000	0.0370	0.0000	0.0000	0.0000	0.0000	0.0000
5	HMR	FREIGHTER	1.0000	1.1111	0.0000	1.7778	0.0000	0.7778	0.3333	0.2222	0.0000
5	HMR	PASSENGER	0.0000	0.1069	0.0000	0.0305	0.0000	0.0611	0.0000	0.0305	0.0000
5	HMR	TANKER	0.6136	0.4773	0.0000	0.4091	0.0000	0.6818	0.0682	0.0000	0.0000
5	PHI	FREIGHTER	0.0000	0.0000	0.0000	0.4444	0.0000	0.0000	0.0000	0.0000	0.0000
5	PHI	PASSENGER	0.0000	0.0764	0.0000	0.0255	0.0000	0.0255	0.0000	0.0000	0.0000
5	PHI	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5	WNC	FREIGHTER	0.2308	0.3846	0.0000	0.0769	0.0000	0.0000	0.0000	0.0000	0.0000
5	WNC	PASSENGER	0.0000	0.1607	0.0000	0.0179	0.0000	0.0625	0.0179	0.0268	0.0000
5	WNC	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	CHA	FREIGHTER	0.1000	0.2000	0.0000	0.2000	0.0000	0.1000	0.0000	0.0000	0.0000
7	CHA	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	CHA	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	JAC	FREIGHTER	0.9559	2.1029	0.0000	2.8676	0.0000	0.1912	0.1912	0.3824	0.0000

Table A.3.7 Risk-Based Rankings - U.S. Flag, MSO, Casualty Frequency, Injuries

Bin		Level III Intervention Strategy Importance									
District	MSO	Service	Cargo/Poll.	Steering	Documents	Drills	Auxiliary Sys.	Power Plant	Fire Prevention	Hull	Liferaing
7	JAC	PASSENGER	0.1316	0.2632	0.0000	0.1316	0.0000	0.0000	0.0000	0.0658	0.0000
7	JAC	TANKER	0.3750	0.3750	0.0000	0.2500	0.0000	0.2500	0.0000	0.0000	0.0000
7	MIA	FREIGHTER	0.0345	0.1724	0.0000	0.0345	0.0000	0.0690	0.0000	0.0000	0.0000
7	MIA	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	MIA	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	SAV	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	SAV	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	SAV	TANKER	0.0000	0.0000	0.0000	0.5000	0.0000	0.0000	0.0000	0.0000	0.0000
7	SJP	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	SJP	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	SJP	TANKER	1.2000	0.2400	0.0000	1.4400	0.0000	0.0000	0.0000	0.0000	0.0000
7	TAM	FREIGHTER	0.0000	0.0000	0.0000	0.0714	0.0000	0.0000	0.0000	0.0000	0.0000
7	TAM	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	TAM	TANKER	2.1622	1.6216	0.0000	2.7027	0.0000	0.2703	0.2703	0.5405	0.0000
8	COR	FREIGHTER	0.0000	0.0000	0.0000	8.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	COR	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	COR	TANKER	0.2400	0.6000	0.0000	0.3600	0.0000	0.0000	0.0000	0.2400	0.0000
8	GAL	FREIGHTER	2.3913	3.3478	0.0000	11.0000	0.0000	1.4348	0.0000	0.9565	0.0000
8	GAL	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Table A.3.7 Risk-Based Rankings - U.S. Flag, MSO, Casualty Frequency, Injuries

Bin			Level III Intervention Strategy Importance								
District	MSO	Service	Cargo/Pol.	Steering	Documents	Drills	Auxiliary Sys.	Power Plant	Fire Prevention	Hull	Lifesaving
8	GAL	TANKER	0.0625	0.0625	0.0000	0.0313	0.0000	0.0313	0.0000	0.0313	0.0000
8	HOU	FREIGHTER	1.2444	1.5556	0.0000	4.6667	0.0000	0.0000	0.0000	0.0000	0.0000
8	HOU	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	HOU	TANKER	0.0667	0.1333	0.0000	0.0667	0.0000	0.0000	0.0000	0.0333	0.0000
8	MOB	FREIGHTER	0.7143	1.0000	0.0000	0.8571	0.0000	0.1429	0.0000	0.2857	0.0000
8	MOB	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	MOB	TANKER	1.2857	3.4286	0.0000	1.9286	0.0000	0.2143	0.0000	0.0000	0.0000
8	MOR	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	MOR	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	MOR	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	NEW	FREIGHTER	2.8421	6.0000	0.0000	14.2105	0.0000	0.0000	0.0000	0.3158	0.0000
8	NEW	PASSENGER	0.0000	0.0215	0.0000	0.0043	0.0000	0.0000	0.0000	0.0000	0.0000
8	NEW	TANKER	0.5333	0.8000	0.0000	2.1333	0.0000	0.0000	0.0000	0.0000	0.0000
8	PAT	FREIGHTER	0.1644	0.5753	0.0000	0.5753	0.0000	0.0000	0.2466	0.0000	0.0000
8	PAT	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	PAT	TANKER	0.4688	0.5625	0.0000	0.5625	0.0000	0.0000	0.0000	0.0938	0.0000
9	BUF	FREIGHTER	0.1316	1.7105	0.0000	0.5263	0.0000	0.5263	0.0000	0.7895	0.0000
9	BUF	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
9	BUF	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000



Table A.3.7 Risk-Based Rankings - U.S. Flag, MSO, Casualty Frequency, Injuries

Bin		Level III Intervention Strategy Importance									
District	MSO	Service	Cargo/Poll.	Steering	Documents	Drills	Auxiliary Sys.	Power Plant	Fire Prevention	Hull	Lifesaving
9	CHI	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
9	CHI	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
9	CHI	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
9	CLE	FREIGHTER	0.7619	1.9048	0.0000	1.3333	0.0000	0.0000	0.3810	0.0000	0.0000
9	CLE	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
9	CLE	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
9	DET	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
9	DET	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
9	DET	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
9	DUL	FREIGHTER	0.6250	0.8036	0.0000	0.5357	0.0000	0.3571	0.0000	0.3571	0.0000
9	DUL	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
9	DUL	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
9	MIL	FREIGHTER	0.0000	0.1290	0.0000	0.1290	0.0000	0.0645	0.0645	0.0000	0.0000
9	MIL	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
9	MIL	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
9	SIM	FREIGHTER	0.1579	0.1579	0.0000	0.0526	0.0000	0.0526	0.0000	0.0000	0.0000
9	SIM	PASSENGER	0.0000	0.0076	0.0000	0.0076	0.0000	0.0000	0.0000	0.0000	0.0000
9	SIM	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
9	SSM	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Table A.3.7 Risk-Based Rankings - U.S. Flag, MSO, Casualty Frequency, Injuries

Table A.3.7 Risk-Based Rankings - U.S. Flag, MSO, Casualty Frequency, Injuries											
Bin			Level III Intervention Strategy Importance								
District	MSO	Service	Cargo/Poll.	Steering	Documents	Drills	Auxiliary Sys.	Power Plant	Fire Prevention	Hull	Lifesaving
9	SSM	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
9	SSM	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
9	STB	FREIGHTER	0.4884	1.3023	0.0000	1.1395	0.0000	0.0000	0.0000	0.0000	0.0000
9	STB	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
9	STB	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
9	TOL	FREIGHTER	0.1667	0.3333	0.0000	0.3333	0.0000	0.0833	0.0000	0.0000	0.0000
9	TOL	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
9	TOL	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
11	LOS	FREIGHTER	2.6897	4.5724	0.0000	9.9517	0.0000	1.3448	0.0000	4.8414	0.0000
11	LOS	PASSENGER	0.0048	0.0337	0.0000	0.0096	0.0000	0.0000	0.0000	0.0000	0.0000
11	LOS	TANKER	3.3488	2.2326	0.0000	2.9767	0.0000	0.1860	0.1860	0.7442	0.0000
11	PAC	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
11	PAC	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
11	PAC	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
11	SDC	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
11	SDC	PASSENGER	0.0109	0.0109	0.0000	0.0109	0.0000	0.0000	0.0000	0.0109	0.0000
11	SDC	TANKER	0.0000	0.1000	0.0000	0.1000	0.0000	0.0000	0.0000	0.1000	0.0000
11	SFC	FREIGHTER	2.1905	1.3690	0.0000	6.0238	0.0000	0.0000	0.5476	0.8214	0.0000
11	SFC	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Table A.3.7 Risk-Based Rankings - U.S. Flag, MSO, Casualty Frequency, Injuries

Bin		Level III Intervention Strategy Importance									
District	MSO	Service	Cargo/Poll.	Steering	Documents	Drills	Auxiliary Sys.	Power Plant	Fire Prevention	Hull	Liferaing
11	SFC	TANKER	0.3529	0.0392	0.0000	0.1176	0.0000	0.0000	0.0000	0.1569	0.0000
13	POR	FREIGHTER	0.3256	0.0930	0.0000	0.1395	0.0000	0.0465	0.0465	0.0465	0.0000
13	POR	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
13	POR	TANKER	2.6765	4.7353	0.0000	4.9412	0.0000	0.2059	0.0000	1.2353	0.0000
13	SEA	FREIGHTER	2.9091	3.2000	0.0000	9.3091	0.0000	0.0000	0.5818	0.5818	0.0000
13	SEA	PASSENGER	0.1136	1.6477	0.0000	0.8523	0.0000	0.3409	0.1705	0.0568	0.0000
13	SEA	TANKER	0.7273	1.2121	0.0000	4.3636	0.0000	0.2424	0.0000	0.0000	0.0000
13	TAC	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
13	TAC	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
13	TAC	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
14	GUA	FREIGHTER	0.0000	0.0526	0.0000	0.0526	0.0000	0.0000	0.0000	0.0000	0.0000
14	GUA	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
14	GUA	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
14	HON	FREIGHTER	0.3824	1.1471	0.0000	4.9706	0.0000	0.0000	0.0000	0.5735	0.0000
14	HON	PASSENGER	0.0408	0.3061	0.0000	0.1224	0.0000	0.0408	0.0204	0.0000	0.0000
14	HON	TANKER	2.3065	2.7258	0.0000	5.4516	0.0000	1.2581	0.6290	2.5161	0.0000
17	ANC	FREIGHTER	0.0612	0.0204	0.0000	0.0204	0.0000	0.0000	0.0000	0.0000	0.0000
17	ANC	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
17	ANC	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Table A.3.7 Risk-Based Rankings - U.S. Flag, MSO, Casualty Frequency, Injuries												
Bin			Level III Intervention Strategy Importance									
District	MSO	Service	Cargo/Poll.	Steering	Documents	Drills	Auxiliary Sys.	Power Plant	Fire Prevention	Hull	Lifesaving	
17	JUN	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
17	JUN	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
17	JUN	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
17	VAL	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
17	VAL	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
17	VAL	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	

Table A.3.8 Risk-Based Rankings - U.S. Flag, MSO, Casualty Frequency, Property Damage

Table A.3.8 Risk-Based Rankings - U.S. Flag, MSO, Casualty Frequency, Property Damage											
Bin			Level III Intervention Strategy Importance								
District	MSO	Service	Cargo/Poll.	Steering	Documents	Drills	Auxiliary Sys.	Power Plant	Fire Prevention	Hull	Lifesaving
1	BOS	FREIGHTER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
1	BOS	PASSENGER	\$123	\$491	\$0	\$614	\$0	\$0	\$0	\$0	\$0
1	BOS	TANKER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
1	NYC	FREIGHTER	\$296,615	\$321,333	\$0	\$1,038,151	\$0	\$123,589	\$49,436	\$49,436	\$0
1	NYC	PASSENGER	\$0	\$4,225	\$0	\$1,207	\$0	\$0	\$402	\$604	\$0
1	NYC	TANKER	\$22,126	\$26,551	\$0	\$66,378	\$0	\$4,425	\$2,213	\$6,638	\$0
1	POM	FREIGHTER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
1	POM	PASSENGER	\$0	\$3	\$0	\$0	\$0	\$0	\$0	\$0	\$0
1	POM	TANKER	\$0	\$303	\$0	\$0	\$0	\$0	\$0	\$303	\$0
1	PRO	FREIGHTER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
1	PRO	PASSENGER	\$72	\$144	\$0	\$72	\$0	\$0	\$0	\$0	\$0
1	PRO	TANKER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2	DAV	FREIGHTER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2	DAV	PASSENGER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2	DAV	TANKER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2	HUN	FREIGHTER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2	HUN	PASSENGER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0

2	HUN	TANKER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2	LOU	FREIGHTER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2	LOU	PASSENGER	\$0	\$1,484	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2	LOU	TANKER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2	MEM	FREIGHTER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2	MEM	PASSENGER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$11	\$0	\$0
2	MEM	TANKER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2	NAS	FREIGHTER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2	NAS	PASSENGER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2	NAS	TANKER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2	PAD	FREIGHTER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2	PAD	PASSENGER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2	PAD	TANKER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2	PIT	FREIGHTER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2	PIT	PASSENGER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2	PIT	TANKER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2	SLM	FREIGHTER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2	SLM	PASSENGER	\$0	\$7	\$0	\$14	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2	SLM	TANKER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2	STP	FREIGHTER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2	STP	PASSENGER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2	STP	TANKER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
5	BAL	FREIGHTER	\$1,765	\$3,088	\$0	\$0	\$0	\$0	\$0	\$441	\$0	\$0	\$0

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5	BAL	PASSENGER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
5	BAL	TANKER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
5	HMR	FREIGHTER	\$66,031	\$73,368	\$0	\$117,389	\$0	\$51,358	\$22,010	\$14,674	\$0	\$0
5	HMR	PASSENGER	\$0	\$7,577	\$0	\$2,165	\$0	\$4,330	\$0	\$2,165	\$0	\$0
5	HMR	TANKER	\$15,530	\$12,079	\$0	\$10,353	\$0	\$17,256	\$1,726	\$0	\$0	\$0
5	PHI	FREIGHTER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
5	PHI	PASSENGER	\$0	\$787	\$0	\$262	\$0	\$262	\$0	\$0	\$0	\$0
5	PHI	TANKER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
5	WNC	FREIGHTER	\$62,308	\$103,846	\$0	\$20,769	\$0	\$0	\$0	\$0	\$0	\$0
5	WNC	PASSENGER	\$0	\$9,691	\$0	\$1,077	\$0	\$3,769	\$1,077	\$1,615	\$0	\$0
5	WNC	TANKER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
7	CHA	FREIGHTER	\$1,265	\$2,530	\$0	\$2,530	\$0	\$1,265	\$0	\$0	\$0	\$0
7	CHA	PASSENGER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
7	CHA	TANKER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
7	JAC	FREIGHTER	\$29,779	\$65,515	\$0	\$89,338	\$0	\$5,956	\$5,956	\$11,912	\$0	\$0
7	JAC	PASSENGER	\$1,553	\$3,105	\$0	\$1,553	\$0	\$0	\$0	\$776	\$0	\$0
7	JAC	TANKER	\$6,984	\$6,984	\$0	\$4,656	\$0	\$4,656	\$0	\$0	\$0	\$0
7	MIA	FREIGHTER	\$38,897	\$194,483	\$0	\$38,897	\$0	\$77,793	\$0	\$0	\$0	\$0
7	MIA	PASSENGER	\$54	\$218	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
7	MIA	TANKER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
7	SAV	FREIGHTER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
7	SAV	PASSENGER	\$0	\$0	\$0	\$0	\$0	\$595	\$595	\$0	\$0	\$0
7	SAV	TANKER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0

7	SJP	FREIGHTER	\$0	\$429	\$0	\$0	\$0	\$0	\$143	\$0	\$0	\$0	\$0
7	SJP	PASSENGER	\$808	\$5,658	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
7	SJP	TANKER	\$100	\$20	\$0	\$120	\$0	\$0	\$0	\$0	\$0	\$0	\$0
7	TAM	FREIGHTER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
7	TAM	PASSENGER	\$96	\$192	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
7	TAM	TANKER	\$20,692	\$15,519	\$0	\$25,865	\$0	\$2,586	\$2,586	\$5,173	\$0	\$0	\$0
8	COR	FREIGHTER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
8	COR	PASSENGER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
8	COR	TANKER	\$14,813	\$37,032	\$0	\$22,219	\$0	\$0	\$0	\$14,813	\$0	\$0	\$0
8	GAL	FREIGHTER	\$37,090	\$51,927	\$0	\$170,616	\$0	\$22,254	\$14,836	\$0	\$0	\$0	\$0
8	GAL	PASSENGER	\$0	\$1	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
8	GAL	TANKER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
8	HOU	FREIGHTER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
8	HOU	PASSENGER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
8	HOU	TANKER	\$240,883	\$481,767	\$0	\$240,883	\$0	\$0	\$0	\$120,442	\$0	\$0	\$0
8	MOB	FREIGHTER	\$57,274	\$80,183	\$0	\$68,729	\$0	\$11,455	\$22,910	\$0	\$0	\$0	\$0
8	MOB	PASSENGER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
8	MOB	TANKER	\$14,529	\$38,743	\$0	\$21,793	\$0	\$2,421	\$0	\$0	\$0	\$0	\$0
8	MOR	FREIGHTER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
8	MOR	PASSENGER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
8	MOR	TANKER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
8	NEW	FREIGHTER	\$209,247	\$441,743	\$0	\$1,046,233	\$0	\$0	\$0	\$23,250	\$0	\$0	\$0
8	NEW	PASSENGER	\$0	\$177	\$0	\$35	\$0	\$0	\$0	\$0	\$0	\$0	\$0



8	NEW	TANKER	\$9,667	\$14,500	\$0	\$38,667	\$0	\$0	\$0	\$0	\$0	\$0	\$0
8	PAT	FREIGHTER	\$11,522	\$40,326	\$0	\$40,326	\$0	\$0	\$17,283	\$0	\$0	\$0	\$0
8	PAT	PASSENGER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
8	PAT	TANKER	\$1,575	\$1,890	\$0	\$1,890	\$0	\$0	\$0	\$0	\$315	\$0	\$0
9	BUF	FREIGHTER	\$5,170	\$67,215	\$0	\$20,682	\$0	\$20,682	\$0	\$31,023	\$0	\$0	\$0
9	BUF	PASSENGER	\$0	\$76	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
9	BUF	TANKER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
9	CHI	FREIGHTER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
9	CHI	PASSENGER	\$3,490	\$3,490	\$0	\$0	\$0	\$0	\$0	\$3,490	\$0	\$0	\$0
9	CHI	TANKER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
9	CLE	FREIGHTER	\$309,079	\$772,698	\$0	\$540,888	\$0	\$0	\$154,540	\$0	\$0	\$0	\$0
9	CLE	PASSENGER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
9	CLE	TANKER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
9	DET	FREIGHTER	\$5,188	\$5,188	\$0	\$0	\$0	\$0	\$0	\$2,594	\$0	\$0	\$0
9	DET	PASSENGER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
9	DET	TANKER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
9	DUL	FREIGHTER	\$33,188	\$42,670	\$0	\$28,446	\$0	\$18,964	\$0	\$18,964	\$0	\$0	\$0
9	DUL	PASSENGER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
9	DUL	TANKER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
9	MIL	FREIGHTER	\$0	\$69,419	\$0	\$69,419	\$0	\$34,710	\$34,710	\$0	\$0	\$0	\$0
9	MIL	PASSENGER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
9	MIL	TANKER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
9	SIM	FREIGHTER	\$15,000	\$15,000	\$0	\$5,000	\$0	\$5,000	\$0	\$0	\$0	\$0	\$0

9	SIM	PASSENGER	\$0	\$115	\$0	\$115	\$0	\$0	\$0	\$0	\$0	\$0
9	SIM	TANKER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
9	SSM	FREIGHTER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
9	SSM	PASSENGER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
9	SSM	TANKER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
9	STB	FREIGHTER	\$9,349	\$24,930	\$0	\$21,814	\$0	\$0	\$0	\$0	\$0	\$0
9	STB	PASSENGER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
9	STB	TANKER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
9	TOL	FREIGHTER	\$75,738	\$151,475	\$0	\$151,475	\$0	\$37,869	\$0	\$0	\$0	\$0
9	TOL	PASSENGER	\$0	\$667	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
9	TOL	TANKER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
11	LOS	FREIGHTER	\$40,245	\$68,416	\$0	\$148,906	\$0	\$20,122	\$0	\$72,441	\$0	\$0
11	LOS	PASSENGER	\$2	\$17	\$0	\$5	\$0	\$0	\$0	\$0	\$0	\$0
11	LOS	TANKER	\$12,788	\$8,526	\$0	\$11,367	\$0	\$710	\$710	\$2,842	\$0	\$0
11	PAC	FREIGHTER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
11	PAC	PASSENGER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
11	PAC	TANKER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
11	SDC	FREIGHTER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
11	SDC	PASSENGER	\$31	\$31	\$0	\$31	\$0	\$0	\$0	\$31	\$0	\$0
11	SDC	TANKER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
11	SFC	FREIGHTER	\$296,581	\$185,363	\$0	\$815,598	\$0	\$0	\$74,145	\$111,218	\$0	\$0
11	SFC	PASSENGER	\$561	\$561	\$0	\$0	\$0	\$93	\$0	\$374	\$0	\$0
11	SFC	TANKER	\$16,579	\$1,842	\$0	\$5,526	\$0	\$0	\$0	\$7,368	\$0	\$0

13	POR	FREIGHTER	\$107,605	\$30,744	\$0	\$46,116	\$0	\$15,372	\$15,372	\$15,372	\$0
13	POR	PASSENGER	\$1,559	\$3,118	\$0	\$0	\$0	\$0	\$0	\$1,559	\$0
13	POR	TANKER	\$29,966	\$53,017	\$0	\$55,323	\$0	\$2,305	\$0	\$13,831	\$0
13	SEA	FREIGHTER	\$413,486	\$454,835	\$0	\$1,323,156	\$0	\$0	\$82,697	\$82,697	\$0
13	SEA	PASSENGER	\$5,067	\$73,475	\$0	\$38,004	\$0	\$15,202	\$7,601	\$2,534	\$0
13	SEA	TANKER	\$1,977	\$3,295	\$0	\$11,864	\$0	\$659	\$0	\$0	\$0
13	TAC	FREIGHTER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
13	TAC	PASSENGER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
13	TAC	TANKER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
14	GUA	FREIGHTER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
14	GUA	PASSENGER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
14	GUA	TANKER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
14	HON	FREIGHTER	\$804	\$2,413	\$0	\$10,457	\$0	\$0	\$0	\$1,207	\$0
14	HON	PASSENGER	\$8,441	\$63,307	\$0	\$25,323	\$0	\$8,441	\$4,220	\$0	\$0
14	HON	TANKER	\$111,357	\$131,604	\$0	\$263,208	\$0	\$60,740	\$30,370	\$121,481	\$0
17	ANC	FREIGHTER	\$12,245	\$4,082	\$0	\$4,082	\$0	\$0	\$0	\$0	\$0
17	ANC	PASSENGER	\$0	\$0	\$0	\$0	\$0	\$0	\$30	\$0	\$0
17	ANC	TANKER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
17	JUN	FREIGHTER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
17	JUN	PASSENGER	\$54	\$269	\$0	\$0	\$0	\$162	\$0	\$0	\$0
17	JUN	TANKER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
17	VAL	FREIGHTER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
17	VAL	PASSENGER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0

17	VAL	TANKER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
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Table A.3.9 Risk-Based Rankings - U.S. Flag, MSO, Casualty Frequency, Pollution

Table A.3.9 Risk-Based Rankings - U.S. Flag, MSO, Casualty Frequency, Pollution											
Bin			Level III Intervention Strategy Importance								
District	MSO	Service	Cargo/Poll.	Steering	Documents	Drills	Auxiliary Sys.	Power Plant	Fire Prevention	Hull	Lifesaving
1	BOS	FREIGHTER	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1	BOS	PASSENGER	0.01	0.04	0.00	0.05	0.00	0.00	0.00	0.00	0.00
1	BOS	TANKER	0.05	0.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1	NYC	FREIGHTER	80.72	87.44	0.00	282.51	0.00	33.63	13.45	13.45	0.00
1	NYC	PASSENGER	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1	NYC	TANKER	12.39	14.87	0.00	37.17	0.00	2.48	1.24	3.72	0.00
1	POM	FREIGHTER	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1	POM	PASSENGER	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1	POM	TANKER	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1	PRO	FREIGHTER	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1	PRO	PASSENGER	0.14	0.29	0.00	0.14	0.00	0.00	0.00	0.00	0.00
1	PRO	TANKER	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2	DAV	FREIGHTER	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2	DAV	PASSENGER	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2	DAV	TANKER	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2	HUN	FREIGHTER	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2	HUN	PASSENGER	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Table A.3.9 Risk-Based Rankings - U.S. Flag, MSO, Casualty Frequency, Pollution

Bin			Level III Intervention Strategy Importance								
District	MSO	Service	Cargo/Poll.	Steering	Documents	Drills	Auxiliary Sys.	Power Plant	Fire Prevention	Hull	Liferaising
2	HUN	TANKER	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2	LOU	FREIGHTER	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2	LOU	PASSENGER	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2	LOU	TANKER	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2	MEM	FREIGHTER	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2	MEM	PASSENGER	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2	MEM	TANKER	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2	NAS	FREIGHTER	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2	NAS	PASSENGER	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2	NAS	TANKER	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2	PAD	FREIGHTER	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2	PAD	PASSENGER	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2	PAD	TANKER	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2	PIT	FREIGHTER	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2	PIT	PASSENGER	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2	PIT	TANKER	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2	SLM	FREIGHTER	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2	SLM	PASSENGER	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2	SLM	TANKER	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Table A.3.9 Risk-Based Rankings - U.S. Flag, MSO, Casualty Frequency, Pollution

Bin		Level III Intervention Strategy Importance									
District	MSO	Service	Cargo/Poll.	Steering	Documents	Drills	Auxiliary Sys.	Power Plant	Fire Prevention	Hull	Lifesaving
2	STP	FREIGHTER	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2	STP	PASSENGER	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2	STP	TANKER	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5	BAL	FREIGHTER	1.37	2.39	0.00	0.00	0.00	0.34	0.00	0.00	0.00
5	BAL	PASSENGER	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5	BAL	TANKER	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5	HMR	FREIGHTER	197.50	219.44	0.00	351.11	0.00	153.61	65.83	43.89	0.00
5	HMR	PASSENGER	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5	HMR	TANKER	14.93	11.61	0.00	9.95	0.00	16.59	1.66	0.00	0.00
5	PHI	FREIGHTER	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5	PHI	PASSENGER	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5	PHI	TANKER	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5	WNC	FREIGHTER	0.23	0.38	0.00	0.08	0.00	0.00	0.00	0.00	0.00
5	WNC	PASSENGER	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5	WNC	TANKER	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
7	CHA	FREIGHTER	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
7	CHA	PASSENGER	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
7	CHA	TANKER	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
7	JAC	FREIGHTER	10.29	22.65	0.00	30.88	0.00	2.06	2.06	4.12	0.00

Table A.3.9 Risk-Based Rankings - U.S. Flag, MSO, Casualty Frequency, Pollution

Bin			Level III Intervention Strategy Importance								
District	MSO	Service	Cargo/Poll.	Steering	Documents	Drills	Auxiliary Sys.	Power Plant	Fire Prevention	Hull	Lifesaving
7	JAC	PASSENGER	1.32	2.63	0.00	1.32	0.00	0.00	0.00	0.66	0.00
7	JAC	TANKER	16.31	16.31	0.00	10.88	0.00	10.88	0.00	0.00	0.00
7	MIA	FREIGHTER	1.38	6.90	0.00	1.38	0.00	2.76	0.00	0.00	0.00
7	MIA	PASSENGER	0.08	0.30	0.00	0.00	0.00	0.00	0.00	0.00	0.00
7	MIA	TANKER	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
7	SAV	FREIGHTER	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
7	SAV	PASSENGER	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
7	SAV	TANKER	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
7	SJP	FREIGHTER	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
7	SJP	PASSENGER	0.46	3.24	0.00	0.00	0.00	0.00	0.00	0.00	0.00
7	SJP	TANKER	85.20	17.04	0.00	102.24	0.00	0.00	0.00	0.00	0.00
7	TAM	FREIGHTER	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
7	TAM	PASSENGER	0.01	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00
7	TAM	TANKER	217.73	163.30	0.00	272.16	0.00	27.22	27.22	54.43	0.00
8	COR	FREIGHTER	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
8	COR	PASSENGER	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
8	COR	TANKER	54.40	136.00	0.00	81.60	0.00	0.00	0.00	54.40	0.00
8	GAL	FREIGHTER	27.93	39.11	0.00	128.50	0.00	16.76	0.00	11.17	0.00
8	GAL	PASSENGER	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00



Table A.3.9 Risk-Based Rankings - U.S. Flag, MSO, Casualty Frequency, Pollution												
Bin			Level III Intervention Strategy Importance									
District	MSO	Service	Cargo/Poll.	Steering	Documents	Drills	Auxiliary Sys.	Power Plant	Fire Prevention	Hull	Lifesaving	
8	GAL	TANKER	1.75	1.75	0.00	0.88	0.00	0.88	0.00	0.88	0.00	
8	HOU	FREIGHTER	1230.58	1538.22	0.00	4614.67	0.00	0.00	0.00	0.00	0.00	
8	HOU	PASSENGER	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
8	HOU	TANKER	42.53	85.07	0.00	42.53	0.00	0.00	0.00	21.27	0.00	
8	MOB	FREIGHTER	16.55	23.17	0.00	19.86	0.00	3.31	0.00	6.62	0.00	
8	MOB	PASSENGER	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
8	MOB	TANKER	22.57	60.19	0.00	33.86	0.00	3.76	0.00	0.00	0.00	
8	MOR	FREIGHTER	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
8	MOR	PASSENGER	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
8	MOR	TANKER	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
8	NEW	FREIGHTER	10.49	22.14	0.00	52.44	0.00	0.00	0.00	1.17	0.00	
8	NEW	PASSENGER	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
8	NEW	TANKER	1.40	2.10	0.00	5.60	0.00	0.00	0.00	0.00	0.00	
8	PAT	FREIGHTER	3.23	11.32	0.00	11.32	0.00	0.00	4.85	0.00	0.00	
8	PAT	PASSENGER	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
8	PAT	TANKER	2.97	3.56	0.00	3.56	0.00	0.00	0.00	0.59	0.00	
9	BUF	FREIGHTER	32.89	427.63	0.00	131.58	0.00	131.58	0.00	197.37	0.00	
9	BUF	PASSENGER	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
9	BUF	TANKER	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	

Table A.3.9 Risk-Based Rankings - U.S. Flag, MSO, Casualty Frequency, Pollution											
Bin			Level III Intervention Strategy Importance								
District	MSO	Service	Cargo/Poll.	Steering	Documents	Drills	Auxiliary Sys.	Power Plant	Fire Prevention	Hull	Lifesaving
9	CHI	FREIGHTER	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
9	CHI	PASSENGER	0.05	0.05	0.00	0.00	0.00	0.00	0.00	0.05	0.00
9	CHI	TANKER	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
9	CLE	FREIGHTER	59.05	147.62	0.00	103.33	0.00	0.00	29.52	0.00	0.00
9	CLE	PASSENGER	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
9	CLE	TANKER	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
9	DET	FREIGHTER	0.25	0.25	0.00	0.00	0.00	0.00	0.00	0.13	0.00
9	DET	PASSENGER	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
9	DET	TANKER	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
9	DUL	FREIGHTER	0.88	1.13	0.00	0.75	0.00	0.50	0.00	0.50	0.00
9	DUL	PASSENGER	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
9	DUL	TANKER	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
9	MIL	FREIGHTER	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
9	MIL	PASSENGER	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
9	MIL	TANKER	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
9	SIM	FREIGHTER	4.42	4.42	0.00	1.47	0.00	1.47	0.00	0.00	0.00
9	SIM	PASSENGER	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
9	SIM	TANKER	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
9	SSM	FREIGHTER	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Table A.3.9 Risk-Based Rankings - U.S. Flag, MSO, Casualty Frequency, Pollution

Bin		Level III Intervention Strategy Importance									
District	MSO	Service	Cargo/Poll.	Steering	Documents	Drills	Auxiliary Sys.	Power Plant	Fire Prevention	Hull	Lifeseaving
9	SSM	PASSENGER	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
9	SSM	TANKER	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
9	STB	FREIGHTER	0.49	1.30	0.00	1.14	0.00	0.00	0.00	0.00	0.00
9	STB	PASSENGER	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
9	STB	TANKER	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
9	TOL	FREIGHTER	16.67	33.33	0.00	33.33	0.00	8.33	0.00	0.00	0.00
9	TOL	PASSENGER	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
9	TOL	TANKER	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
11	LOS	FREIGHTER	6.83	11.61	0.00	25.26	0.00	3.41	0.00	12.29	0.00
11	LOS	PASSENGER	0.06	0.40	0.00	0.12	0.00	0.00	0.00	0.00	0.00
11	LOS	TANKER	46.67	31.12	0.00	41.49	0.00	2.59	2.59	10.37	0.00
11	PAC	FREIGHTER	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
11	PAC	PASSENGER	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
11	PAC	TANKER	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
11	SDC	FREIGHTER	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
11	SDC	PASSENGER	0.11	0.11	0.00	0.11	0.00	0.00	0.00	0.11	0.00
11	SDC	TANKER	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
11	SFC	FREIGHTER	31.43	19.64	0.00	86.43	0.00	0.00	7.86	11.79	0.00
11	SFC	PASSENGER	1.20	1.20	0.00	0.00	0.00	0.20	0.00	0.80	0.00

Table A.3.9 Risk-Based Rankings - U.S. Flag, MSO, Casualty Frequency, Pollution												
Bin			Level III Intervention Strategy Importance									
District	MSO	Service	Cargo/Poll.	Steering	Documents	Drills	Auxiliary Sys.	Power Plant	Fire Prevention	Hull	Liferafting	
11	SFC	TANKER	465.18	51.69	0.00	155.06	0.00	0.00	0.00	206.75	0.00	
13	POR	FREIGHTER	7.49	2.14	0.00	3.21	0.00	1.07	1.07	1.07	0.00	
13	POR	PASSENGER	0.29	0.59	0.00	0.00	0.00	0.00	0.00	0.29	0.00	
13	POR	TANKER	7.52	13.30	0.00	13.88	0.00	0.58	0.00	3.47	0.00	
13	SEA	FREIGHTER	19.82	21.80	0.00	63.42	0.00	0.00	3.96	3.96	0.00	
13	SEA	PASSENGER	0.02	0.22	0.00	0.11	0.00	0.05	0.02	0.01	0.00	
13	SEA	TANKER	5.00	8.33	0.00	30.00	0.00	1.67	0.00	0.00	0.00	
13	TAC	FREIGHTER	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
13	TAC	PASSENGER	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
13	TAC	TANKER	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
14	GUA	FREIGHTER	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
14	GUA	PASSENGER	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
14	GUA	TANKER	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
14	HON	FREIGHTER	374.32	1122.97	0.00	4866.21	0.00	0.00	0.00	561.49	0.00	
14	HON	PASSENGER	8.24	61.84	0.00	24.73	0.00	8.24	4.12	0.00	0.00	
14	HON	TANKER	182.39	215.55	0.00	431.10	0.00	99.48	49.74	198.97	0.00	
17	ANC	FREIGHTER	0.31	0.10	0.00	0.10	0.00	0.00	0.00	0.00	0.00	
17	ANC	PASSENGER	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
17	ANC	TANKER	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	

Table A.3.9 Risk-Based Rankings - U.S. Flag, MSO, Casualty Frequency, Pollution

Bin		Level III Intervention Strategy Importance									
District	MSO	Service	Cargo/Poll.	Steering	Documents	Drills	Auxiliary Sys.	Power Plant	Fire Prevention	Hull	Liferaaving
17	JUN	FREIGHTER	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
17	JUN	PASSENGER	0.32	1.60	0.00	0.00	0.00	0.96	0.00	0.00	0.00
17	JUN	TANKER	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
17	VAL	FREIGHTER	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
17	VAL	PASSENGER	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
17	VAL	TANKER	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

#### **A.4 Foreign Flag Marine Safety Office Level Risk-Based Ranking Results**

Bin data used in the risk-based ranking for district level data aggregation are shown in Table A.4.1. The risk-based ranking results are shown in Tables A.4.2 through A.4.9 as follows:

- Table A.4.2 - Foreign Flag, MSO, Relative Frequency, Deaths,
- Table A.4.3 - Foreign Flag, MSO, Relative Frequency, Injuries,
- Table A.4.4 - Foreign Flag, MSO, Relative Frequency, Property Loss,
- Table A.4.5 - Foreign Flag, MSO, Relative Frequency, Pollution,
- Table A.4.6 - Foreign Flag, MSO, Casualty Frequency, Deaths,
- Table A.4.7 - Foreign Flag, MSO, Casualty Frequency, Injuries,
- Table A.4.8 - Foreign Flag, MSO, Casualty Frequency, Property Loss,
- Table A.4.9 - Foreign Flag, MSO, Casualty Frequency, Pollution.

Table A.4.1 Risk-Based Ranking Bin Data Summary - Marine Safety Offices, Foreign Flag

Table A.4.1 Risk-Based Ranking Bin Data Summary - Marine Safety Offices, Foreign Flag											
Bin			inspections	casualties	Relative Freq.	Casualty Freq.	Casualty Freq. Standard Deviation	Consequences			
District	MSO	Service						Deaths	injuries	property	pollution
1	BOS	FREIGHTER	125	15	0.0116	0.12000	0.0291	0	0	\$951,000	0
1	BOS	PASSENGER	0	0	0.0000	NOINSPE CTIONS	NOINSPE CTIONS	0	0	\$0	0
1	BOS	TANKER	69	12	0.0093	0.17391	0.0456	1	0	\$3,500	331
1	LIS	FREIGHTER	160	8	0.0062	0.05000	0.0172	0	1	\$100	8
1	LIS	PASSENGER	0	0	0.0000	NOINSPE CTIONS	NOINSPE CTIONS	0	0	\$0	0
1	LIS	TANKER	34	6	0.0046	0.17647	0.0654	0	0	\$60,000	63
1	NYC	FREIGHTER	751	53	0.0409	0.07057	0.0093	0	2	\$620,730	736
1	NYC	PASSENGER	0	0	0.0000	NOINSPE CTIONS	NOINSPE CTIONS	0	0	\$0	0
1	NYC	TANKER	272	44	0.0340	0.16176	0.0223	0	1	\$100,000	1117
1	POM	FREIGHTER	85	5	0.0039	0.05882	0.0255	0	0	\$170,000	0
1	POM	PASSENGER	0	0	0.0000	NOINSPE CTIONS	NOINSPE CTIONS	0	0	\$0	0
1	POM	TANKER	53	7	0.0054	0.13208	0.0465	0	0	\$68,000	99047
1	PRO	FREIGHTER	128	12	0.0093	0.09375	0.0258	0	1	\$30,500	83

Table A.4.1 Risk-Based Ranking Bin Data Summary - Marine Safety Offices, Foreign Flag												
Bin			inspections	casualties	Relative Freq.	Casualty Freq.	Casualty Freq. Standard Deviation	Consequences				
District	MSO	Service						Deaths	injuries	property	pollution	
1	PRO	PASSENGER	0	0	0.0000	NOINSPECTIONS	NOINSPECTIONS	0	0	\$0	0	
1	PRO	TANKER	46	5	0.0039	0.10870	0.0459	0	0	\$0	284	
2	ALL MSOs	FREIGHTER	0	0	0.0000	NOINSPECTIONS	NOINSPECTIONS	0	0	\$0	0	
2	ALL MSOs	PASSENGER	0	0	0.0000	NOINSPECTIONS	NOINSPECTIONS	0	0	\$0	0	
2	ALL MSOs	TANKER	0	0	0.0000	NOINSPECTIONS	NOINSPECTIONS	0	0	\$0	0	
5	BAL	FREIGHTER	527	28	0.0216	0.05313	0.0098	0	2	\$590,954	5041	
5	BAL	PASSENGER	0	0	0.0000	NOINSPECTIONS	NOINSPECTIONS	0	0	\$0	0	
5	BAL	TANKER	48	12	0.0093	0.25000	0.0625	0	0	\$25	227	
5	HMR	FREIGHTER	751	32	0.0247	0.04261	0.0074	1	1	\$40,100	929	
5	HMR	PASSENGER	0	0	0.0000	NOINSPECTIONS	NOINSPECTIONS	0	0	\$0	0	
5	HMR	TANKER	134	17	0.0131	0.12687	0.0288	0	0	\$0	14005	
5	PHI	FREIGHTER	1127	37	0.0286	0.03283	0.0053	1	0	\$1,542,500	912	



Table A.4.1 Risk-Based Ranking Bin Data Summary - Marine Safety Offices, Foreign Flag												
Bin			inspections	casualties	Relative Freq.	Casualty Freq.	Casualty Freq. Standard Deviation	Consequences				
District	MSO	Service						Deaths	injuries	property	pollution	
5	PHI	PASSENGER	0	0	0.0000	NOINSPECTIONS	NOINSPECTIONS	0	0	\$0	0	
5	PHI	TANKER	170	26	0.0201	0.15294	0.0276	0	2	\$115,085	713	
5	WNC	FREIGHTER	190	12	0.0093	0.06316	0.0176	0	1	\$60,000	553	
5	WNC	PASSENGER	2	0	0.0000	0.00000	0.0000	0	0	\$0	0	
5	WNC	TANKER	21	12	0.0093	0.57143	0.1080	1	0	\$150,001	6	
7	CHA	FREIGHTER	244	15	0.0116	0.06148	0.0154	0	0	\$0	1594	
7	CHA	PASSENGER	1	0	0.0000	0.00000	0.0000	0	0	\$0	0	
7	CHA	TANKER	3	0	0.0000	0.00000	0.0000	0	0	\$0	0	
7	JAC	FREIGHTER	316	14	0.0108	0.04430	0.0116	0	0	\$202,025	168	
7	JAC	PASSENGER	1	0	0.0000	0.00000	0.0000	0	0	\$0	0	
7	JAC	TANKER	15	7	0.0054	0.46667	0.1288	0	1	\$0	689	
7	MIA	FREIGHTER	735	72	0.0556	0.09796	0.0110	2	0	\$1,071,500	150650	
7	MIA	PASSENGER	15	15	0.0116	1.00000	0.0000	0	4	\$10,000	290	
7	MIA	TANKER	6	2	0.0015	0.33333	0.1925	0	0	\$0	11	
7	PTC	FREIGHTER	17	1	0.0008	0.05882	0.0571	0	0	\$0	0	

Table A.4.1 Risk-Based Ranking Bin Data Summary - Marine Safety Offices, Foreign Flag											
Bin			inspections	casualties	Relative Freq.	Casualty Freq.	Casualty Standard Deviation	Consequences			
District	MSO	Service						Deaths	injuries	property	pollution
7	PTC	PASSENGER	0	0	0.0000	NOINSPECTIONS	NOINSPECTIONS	0	0	\$0	0
7	PTC	TANKER	0	0	0.0000	NOINSPECTIONS	NOINSPECTIONS	0	0	\$0	0
7	SAV	FREIGHTER	527	37	0.0286	0.07021	0.0111	0	0	\$21,600	1147
7	SAV	PASSENGER	1	0	0.0000	0.00000	0.0000	0	0	\$0	0
7	SAV	TANKER	13	3	0.0023	0.23077	0.1169	0	0	\$50,000	100
7	SJP	FREIGHTER	615	22	0.0170	0.03577	0.0075	0	0	\$3,330,100	181
7	SJP	PASSENGER	40	13	0.0100	0.32500	0.0741	0	0	\$10,000	5
7	SJP	TANKER	184	30	0.0232	0.16304	0.0272	0	0	\$10,000	3011
7	STC	FREIGHTER	48	5	0.0039	0.10417	0.0441	0	0	\$0	3
7	STC	PASSENGER	0	0	0.0000	NOINSPECTIONS	NOINSPECTIONS	0	0	\$0	0
7	STC	TANKER	1	0	0.0000	0.00000	0.0000	0	0	\$0	0
7	STT	FREIGHTER	1	0	0.0000	0.00000	0.0000	0	0	\$0	0
7	STT	PASSENGER	1	1	0.0008	1.00000	0.0000	0	0	\$0	0

Table A.4.1 Risk-Based Ranking Bin Data Summary - Marine Safety Offices, Foreign Flag												
Bin			inspections	casualties	Relative Freq.	Casualty Freq.	Casualty Freq. Standard Deviation	Consequences				
District	MSO	Service						Deaths	injuries	property	pollution	
7	STT	TANKER	0	0	0.0000	NOINSPECTIONS	NOINSPECTIONS	0	0	\$0	0	
7	TAM	FREIGHTER	444	19	0.0147	0.04279	0.0096	0	1	\$27,000	594	
7	TAM	PASSENGER	0	0	0.0000	NOINSPECTIONS	NOINSPECTIONS	0	0	\$0	0	
7	TAM	TANKER	11	5	0.0039	0.45455	0.1501	0	0	\$300	243	
8	BAT	FREIGHTER	239	22	0.0170	0.09205	0.0187	0	1	\$35,000	2117	
8	BAT	PASSENGER	0	0	0.0000	NOINSPECTIONS	NOINSPECTIONS	0	0	\$0	0	
8	BAT	TANKER	6	0	0.0000	0.00000	0.0000	0	0	\$0	0	
8	BRN	FREIGHTER	28	2	0.0015	0.07143	0.0487	0	0	\$0	1	
8	BRN	PASSENGER	0	0	0.0000	NOINSPECTIONS	NOINSPECTIONS	0	0	\$0	0	
8	BRN	TANKER	0	0	0.0000	NOINSPECTIONS	NOINSPECTIONS	0	0	\$0	0	
8	COR	FREIGHTER	390	32	0.0247	0.08205	0.0139	0	1	\$515,000	1273	
8	COR	PASSENGER	0	0	0.0000	NOINSPECTIONS	NOINSPECTIONS	0	0	\$0	0	
8	COR	TANKER	183	28	0.0216	0.15301	0.0266	0	0	\$207,500	21502	

Table A.4.1 Risk-Based Ranking Bin Data Summary - Marine Safety Offices, Foreign Flag												
Bin			inspections	casualties	Relative Freq.	Casualty Freq.	Casualty Freq. Standard Deviation	Consequences				
District	MSO	Service						Deaths	injuries	property	pollution	
8	GAL	FREIGHTER	331	11	0.0085	0.03323	0.0099	0	0	\$268,348	680	
8	GAL	PASSENGER	0	0	0.0000	NOINSPECTIONS	NOINSPECTIONS	0	0	\$0	0	
8	GAL	TANKER	127	28	0.0216	0.22047	0.0368	0	1	\$85,425	3967	
8	HOU	FREIGHTER	1068	67	0.0517	0.06273	0.0074	0	2	\$1,770,751	252971	
8	HOU	PASSENGER	0	0	0.0000	NOINSPECTIONS	NOINSPECTIONS	0	0	\$0	0	
8	HOU	TANKER	8	2	0.0015	0.25000	0.1531	0	0	\$0	5	
8	LKC	FREIGHTER	84	7	0.0054	0.08333	0.0302	0	0	\$143,500	16	
8	LKC	PASSENGER	0	0	0.0000	NOINSPECTIONS	NOINSPECTIONS	0	0	\$0	0	
8	LKC	TANKER	2	0	0.0000	0.00000	0.0000	0	0	\$0	0	
8	MOB	FREIGHTER	516	37	0.0286	0.07171	0.0114	1	1	\$10,765	1717	
8	MOB	PASSENGER	0	0	0.0000	NOINSPECTIONS	NOINSPECTIONS	0	0	\$0	0	
8	MOB	TANKER	35	9	0.0069	0.25714	0.0739	0	0	\$230,000	2103	
8	MOR	FREIGHTER	4	0	0.0000	0.00000	0.0000	0	0	\$0	0	

Table A.4.1 Risk-Based Ranking Bin Data Summary - Marine Safety Offices, Foreign Flag												
Bin			inspections	casualties	Relative Freq.	Casualty Freq.	Casualty Standard Deviation	Consequences				
District	MSO	Service						Deaths	injuries	property	pollution	
8	MOR	PASSENGER	0	0	0.0000	NOINSPE CTIONS	NOINSPE CTIONS	0	0	\$0	0	
8	MOR	TANKER	229	11	0.0085	0.04803	0.0141	0	0	\$11,000	10	
8	NEW	FREIGHTER	2412	51	0.0394	0.02114	0.0029	1	2	\$2,780,625	589	
8	NEW	PASSENGER	0	0	0.0000	NOINSPE CTIONS	NOINSPE CTIONS	0	0	\$0	0	
8	NEW	TANKER	215	33	0.0255	0.15349	0.0246	1	0	\$530,520	1594	
8	PAT	FREIGHTER	256	14	0.0108	0.05469	0.0142	0	0	\$55,100	904	
8	PAT	PASSENGER	0	0	0.0000	NOINSPE CTIONS	NOINSPE CTIONS	0	0	\$0	0	
8	PAT	TANKER	148	23	0.0178	0.15541	0.0298	0	8	\$260,489	12036	
8	PCD	FREIGHTER	8	0	0.0000	0.00000	0.0000	0	0	\$0	0	
8	PCD	PASSENGER	0	0	0.0000	NOINSPE CTIONS	NOINSPE CTIONS	0	0	\$0	0	
8	PCD	TANKER	0	0	0.0000	NOINSPE CTIONS	NOINSPE CTIONS	0	0	\$0	0	
8	PLA	FREIGHTER	41	0	0.0000	0.00000	0.0000	0	0	\$0	0	

Table A.4.1 Risk-Based Ranking Bin Data Summary - Marine Safety Offices, Foreign Flag											
Bin			inspections	casualties	Relative Freq.	Casualty Freq.	Casualty Freq. Standard Deviation	Consequences			
District	MSO	Service						Deaths	injuries	property	pollution
8	PLA	PASSENGER	0	0	0.0000	NOINSPE CTIONS	NOINSPE CTIONS	0	0	\$0	0
8	PLA	TANKER	0	0	0.0000	NOINSPE CTIONS	NOINSPE CTIONS	0	0	\$0	0
9	BUF	FREIGHTER	20	1	0.0008	0.05000	0.0487	0	0	\$20,000	0
9	BUF	PASSENGER	0	0	0.0000	NOINSPE CTIONS	NOINSPE CTIONS	0	0	\$0	0
9	BUF	TANKER	11	0	0.0000	0.00000	0.0000	0	0	\$0	0
9	CHI	FREIGHTER	40	1	0.0008	0.02500	0.0247	0	0	\$25,000	0
9	CHI	PASSENGER	0	0	0.0000	NOINSPE CTIONS	NOINSPE CTIONS	0	0	\$0	0
9	CHI	TANKER	4	0	0.0000	0.00000	0.0000	0	0	\$0	0
9	CLE	FREIGHTER	58	4	0.0031	0.06897	0.0333	0	1	\$0	0
9	CLE	PASSENGER	0	0	0.0000	NOINSPE CTIONS	NOINSPE CTIONS	0	0	\$0	0
9	CLE	TANKER	5	3	0.0023	0.60000	0.2191	0	0	\$250,000	0
9	DET	FREIGHTER	59	3	0.0023	0.05085	0.0286	0	0	\$0	0
9	DET	PASSENGER	0	0	0.0000	NOINSPE CTIONS	NOINSPE CTIONS	0	0	\$0	0

Table A.4.1 Risk-Based Ranking Bin Data Summary - Marine Safety Offices, Foreign Flag												
Bin			inspections	casualties	Relative Freq.	Casualty Freq.	Casualty Freq. Standard Deviation	Consequences				
District	MSO	Service						Deaths	injuries	property	pollution	
9	DET	TANKER	4	0	0.0000	0.00000	0.0000	0	0	\$0	0	
9	DUL	FREIGHTER	129	23	0.0178	0.17829	0.0337	1	0	\$554,100	122	
9	DUL	PASSENGER	0	0	0.0000	NOINSPE CTIONS	NOINSPE CTIONS	0	0	\$0	0	
9	DUL	TANKER	1	0	0.0000	0.00000	0.0000	0	0	\$0	0	
9	MAS	FREIGHTER	77	6	0.0046	0.07792	0.0305	0	0	\$0	2	
9	MAS	PASSENGER	0	0	0.0000	NOINSPE CTIONS	NOINSPE CTIONS	0	0	\$0	0	
9	MAS	TANKER	0	0	0.0000	NOINSPE CTIONS	NOINSPE CTIONS	0	0	\$0	0	
9	MIL	FREIGHTER	28	1	0.0008	0.03571	0.0351	0	0	\$150,175	0	
9	MIL	PASSENGER	0	0	0.0000	NOINSPE CTIONS	NOINSPE CTIONS	0	0	\$0	0	
9	MIL	TANKER	3	0	0.0000	0.00000	0.0000	0	0	\$0	0	
9	SIM	FREIGHTER	0	0	0.0000	NOINSPE CTIONS	NOINSPE CTIONS	0	0	\$0	0	
9	SIM	PASSENGER	0	0	0.0000	NOINSPE CTIONS	NOINSPE CTIONS	0	0	\$0	0	

Table A.4.1 Risk-Based Ranking Bin Data Summary - Marine Safety Offices, Foreign Flag

Table A.4.1 Risk-Based Ranking Bin Data Summary - Marine Safety Offices, Foreign Flag											
Bin			inspections	casualties	Relative Freq.	Casualty Freq.	Casualty Freq. Standard Deviation	Consequences			
District	MSO	Service						Deaths	injuries	property	pollution
9	SIM	TANKER	0	0	0.0000	NOINSPE CTIONS	NOINSPE CTIONS	0	0	\$0	0
9	SSM	FREIGHTER	0	0	0.0000	NOINSPE CTIONS	NOINSPE CTIONS	0	0	\$0	0
9	SSM	PASSENGER	0	0	0.0000	NOINSPE CTIONS	NOINSPE CTIONS	0	0	\$0	0
9	SSM	TANKER	0	0	0.0000	NOINSPE CTIONS	NOINSPE CTIONS	0	0	\$0	0
9	STB	FREIGHTER	0	0	0.0000	NOINSPE CTIONS	NOINSPE CTIONS	0	0	\$0	0
9	STB	PASSENGER	0	0	0.0000	NOINSPE CTIONS	NOINSPE CTIONS	0	0	\$0	0
9	STB	TANKER	0	0	0.0000	NOINSPE CTIONS	NOINSPE CTIONS	0	0	\$0	0
9	TOL	FREIGHTER	114	14	0.0108	0.12281	0.0307	0	0	\$991,150	25
9	TOL	PASSENGER	0	0	0.0000	NOINSPE CTIONS	NOINSPE CTIONS	0	0	\$0	0
9	TOL	TANKER	3	0	0.0000	0.00000	0.0000	0	0	\$0	0
11	CON	FREIGHTER	91	8	0.0062	0.08791	0.0297	0	1	\$0	6551



Table A.4.1 Risk-Based Ranking Bin Data Summary - Marine Safety Offices, Foreign Flag

Bin			inspections	casualties	Relative Freq.	Casualty Freq.	Casualty Freq. Standard Deviation	Consequences			
District	MSO	Service						Deaths	injuries	property	pollution
11	CON	PASSENGER	0	0	0.0000	NOINSPE CTIONS	NOINSPE CTIONS	0	0	\$0	0
11	CON	TANKER	1	0	0.0000	0.00000	0.0000	0	0	\$0	0
11	LOS	FREIGHTER	1622	47	0.0363	0.02898	0.0042	0	3	\$7,177,673	1011
11	LOS	PASSENGER	2	1	0.0008	0.50000	0.3536	0	0	\$0	0
11	LOS	TANKER	143	11	0.0085	0.07692	0.0223	0	0	\$50,000	211
11	SBC	FREIGHTER	19	0	0.0000	0.00000	0.0000	0	0	\$0	0
11	SBC	PASSENGER	0	0	0.0000	NOINSPE CTIONS	NOINSPE CTIONS	0	0	\$0	0
11	SBC	TANKER	0	0	0.0000	NOINSPE CTIONS	NOINSPE CTIONS	0	0	\$0	0
11	SDC	FREIGHTER	43	1	0.0008	0.02326	0.0230	0	0	\$0	0
11	SDC	PASSENGER	11	4	0.0031	0.36364	0.1450	0	0	\$0	2
11	SDC	TANKER	1	0	0.0000	0.00000	0.0000	0	0	\$0	0
11	SFC	FREIGHTER	498	27	0.0208	0.05422	0.0101	0	0	\$292,296	1136
11	SFC	PASSENGER	0	0	0.0000	NOINSPE CTIONS	NOINSPE CTIONS	0	0	\$0	0

Table A.4.1 Risk-Based Ranking Bin Data Summary - Marine Safety Offices, Foreign Flag											
Bin			inspections	casualties	Relative Freq.	Casualty Freq.	Casualty Freq. Standard Deviation	Consequences			
District	MSO	Service						Deaths	injuries	property	pollution
11	SFC	TANKER	50	6	0.0046	0.12000	0.0460	0	0	\$250,000	128
13	GRA	FREIGHTER	1	0	0.0000	0.00000	0.0000	0	0	\$0	0
13	GRA	PASSENGER	0	0	0.0000	NOINSPECTIONS	NOINSPECTIONS	0	0	\$0	0
13	GRA	TANKER	0	0	0.0000	NOINSPECTIONS	NOINSPECTIONS	0	0	\$0	0
13	POR	FREIGHTER	1379	56	0.0432	0.04061	0.0053	2	1	\$273,550	6624
13	POR	PASSENGER	1	0	0.0000	0.00000	0.0000	0	0	\$0	0
13	POR	TANKER	47	4	0.0031	0.08511	0.0407	0	1	\$0	42
13	SEA	FREIGHTER	812	26	0.0201	0.03202	0.0062	0	1	\$81,050	1292
13	SEA	PASSENGER	0	0	0.0000	NOINSPECTIONS	NOINSPECTIONS	0	0	\$0	0
13	SEA	TANKER	14	3	0.0023	0.21429	0.1097	0	0	\$10,100	15
14	ASO	FREIGHTER	11	0	0.0000	0.00000	0.0000	0	0	\$0	0
14	ASO	PASSENGER	0	0	0.0000	NOINSPECTIONS	NOINSPECTIONS	0	0	\$0	0
14	ASO	TANKER	1	0	0.0000	0.00000	0.0000	0	0	\$0	0
14	GUA	FREIGHTER	99	2	0.0015	0.02020	0.0141	0	0	\$0	175

Table A.4.1 Risk-Based Ranking Bin Data Summary - Marine Safety Offices, Foreign Flag												
Bin			inspections	casualties	Relative Freq.	Casualty Freq.	Casualty Freq. Standard Deviation	Consequences				
District	MSO	Service						Deaths	injuries	property	pollution	
14	GUA	PASSENGER	3	0	0.0000	0.00000	0.0000	0	0	\$0	0	
14	GUA	TANKER	67	1	0.0008	0.01493	0.0148	0	0	\$30,000	0	
14	HON	FREIGHTER	367	9	0.0069	0.02452	0.0081	0	0	\$0	292	
Bad Data 14	HON	PASSENGER	19	28	0.0216	Bad Data	Bad Data	1	24	\$13,000,000	3	
14	HON	TANKER	144	12	0.0093	0.08333	0.0230	0	0	\$208,000	11	
17	ANC	FREIGHTER	36	3	0.0023	0.08333	0.0461	0	0	\$150,000	0	
17	ANC	PASSENGER	0	0	0.0000	NOINSPECTIONS	NOINSPECTIONS	0	0	\$0	0	
17	ANC	TANKER	21	0	0.0000	0.00000	0.0000	0	0	\$0	0	
17	DHA	FREIGHTER	59	1	0.0008	0.01695	0.0168	0	0	\$0	11	
17	DHA	PASSENGER	0	0	0.0000	NOINSPECTIONS	NOINSPECTIONS	0	0	\$0	0	
17	DHA	TANKER	0	0	0.0000	NOINSPECTIONS	NOINSPECTIONS	0	0	\$0	0	
17	JUN	FREIGHTER	110	5	0.0039	0.04545	0.0199	0	0	\$7,700	50	
17	JUN	PASSENGER	2	0	0.0000	0.00000	0.0000	0	0	\$0	0	

Table A.4.1 Risk-Based Ranking Bin Data Summary - Marine Safety Offices, Foreign Flag

Bin			inspections	casualties	Relative Freq.	Casualty Freq.	Casualty Freq. Standard Deviation	Consequences			
District	MSO	Service						Deaths	injuries	property	pollution
17	JUN	TANKER	3	1	0.0008	0.33333	0.2722	0	1	\$0	0
17	KEN	FREIGHTER	29	0	0.0000	0.00000	0.0000	0	0	\$0	0
17	KEN	PASSENGER	0	0	0.0000	NOINSPECTIONS	NOINSPECTIONS	0	0	\$0	0
17	KEN	TANKER	0	0	0.0000	NOINSPECTIONS	NOINSPECTIONS	0	0	\$0	0
17	KET	FREIGHTER	38	2	0.0015	0.05263	0.0362	0	0	\$0	50
17	KET	PASSENGER	0	0	0.0000	NOINSPECTIONS	NOINSPECTIONS	0	0	\$0	0
17	KET	TANKER	1	0	0.0000	0.00000	0.0000	0	0	\$0	0
17	KOD	FREIGHTER	3	0	0.0000	0.00000	0.0000	0	0	\$0	0
17	KOD	PASSENGER	0	0	0.0000	NOINSPECTIONS	NOINSPECTIONS	0	0	\$0	0
17	KOD	TANKER	0	0	0.0000	NOINSPECTIONS	NOINSPECTIONS	0	0	\$0	0
17	SIT	FREIGHTER	3	0	0.0000	0.00000	0.0000	0	0	\$0	0
17	SIT	PASSENGER	0	0	0.0000	NOINSPECTIONS	NOINSPECTIONS	0	0	\$0	0

Table A.4.1 Risk-Based Ranking Bin Data Summary - Marine Safety Offices, Foreign Flag												
District	Bin		inspections	casualties	Relative Freq.	Casualty Freq.	Casualty Freq. Standard Deviation	Consequences				
	MSO	Service						Deaths	injuries	property	pollution	
17	SIT	TANKER	0	0	0.0000	NOINSPE CTIONS	NOINSPE CTIONS	0	0	\$0	0	
17	VAL	FREIGHTER	3	0	0.0000	0.00000	0.0000	0	0	\$0	0	
17	VAL	PASSENGER	0	0	0.0000	NOINSPE CTIONS	NOINSPE CTIONS	0	0	\$0	0	
17	VAL	TANKER	0	0	0.0000	NOINSPE CTIONS	NOINSPE CTIONS	0	0	\$0	0	
			20572	1295	1.0000			13	66	\$39,659,837	601979	

Table A.4.2 Risk-Based Rankings - Foreign Flag, MSO, Relative Frequency, Deaths

Table A.4.2 Risk-Based Rankings - Foreign Flag, MSO, Relative Frequency, Deaths												
Bin			Level III Intervention Strategy Importance									
District	MSO	Service	Cargo/Poll.	Steering	Documents	Drills	Auxiliary Sys.	Power Plant	Fire Prevention	Hull	Lifesaving	Other
1	BOS	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1	BOS	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1	BOS	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1	LIS	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1	LIS	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1	LIS	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1	NYC	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1	NYC	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1	NYC	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1	POM	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1	POM	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1	POM	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1	PRO	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1	PRO	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1	PRO	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	ALL MSOs	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	ALL MSOs	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Table A.4.2 Risk-Based Rankings - Foreign Flag, MSO, Relative Frequency, Deaths

Bin			Level III Intervention Strategy Importance									
District	MSO	Service	Cargo/Pol.	Steering	Documents	Drills	Auxiliary Sys.	Power Plant	Fire Prevention	Hull	Lifesaving	Other
2	ALL MSOs	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5	BAL	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5	BAL	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5	BAL	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5	HMR	FREIGHTER	0.0093	0.0093	0.0000	0.0015	0.0000	0.0008	0.0000	0.0008	0.0000	0.0008
5	HMR	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5	HMR	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5	PHI	FREIGHTER	0.0124	0.0100	0.0000	0.0008	0.0000	0.0000	0.0000	0.0008	0.0000	0.0000
5	PHI	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5	PHI	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5	WNC	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5	WNC	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5	WNC	TANKER	0.0023	0.0062	0.0000	0.0008	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	CHA	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	CHA	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	CHA	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	JAC	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	JAC	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	JAC	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Table A.4.2 Risk-Based Rankings - Foreign Flag, MSO, Relative Frequency, Deaths

Bin			Level III Intervention Strategy Importance									
District	MSO	Service	Cargo/Poll.	Steering	Documents	Drills	Auxiliary Sys.	Power Plant	Fire Prevention	Hull	Lifesaving	Other
7	MIA	FREIGHTER	0.0633	0.0247	0.0000	0.0015	0.0000	0.0000	0.0000	0.0077	0.0000	0.0015
7	MIA	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	MIA	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	PTC	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	PTC	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	PTC	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	SAV	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	SAV	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	SAV	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	SJP	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	SJP	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	SJP	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	STC	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	STC	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	STC	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	STT	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	STT	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	STT	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	TAM	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000



Table A.4.2 Risk-Based Rankings - Foreign Flag, MSO, Relative Frequency, Deaths

Bin			Level III Intervention Strategy Importance									
District	MSO	Service	Cargo/Poll.	Steering	Documents	Drills	Auxiliary Sys.	Power Plant	Fire Prevention	Hull	Lifesaving	Other
7	TAM	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	TAM	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	BAT	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	BAT	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	BAT	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	BRN	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	BRN	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	BRN	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	COR	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	COR	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	COR	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	GAL	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	GAL	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	GAL	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	HOU	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	HOU	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	HOU	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	LKC	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	LKC	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Table A.4.2 Risk-Based Rankings - Foreign Flag, MSO, Relative Frequency, Deaths

Bin			Level III Intervention Strategy Importance									
District	MSO	Service	Cargo/Pol.	Steering	Documents	Drills	Auxiliary Sys.	Power Plant	Fire Prevention	Hull	Lifesaving	Other
8	LKC	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	MOB	FREIGHTER	0.0100	0.0077	0.0000	0.0023	0.0000	0.0008	0.0000	0.0015	0.0000	0.0008
8	MOB	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	MOB	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	MOR	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	MOR	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	MOR	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	NEW	FREIGHTER	0.0085	0.0147	0.0000	0.0039	0.0000	0.0046	0.0000	0.0000	0.0000	0.0023
8	NEW	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	NEW	TANKER	0.0069	0.0069	0.0000	0.0015	0.0000	0.0000	0.0023	0.0008	0.0000	0.0015
8	PAT	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	PAT	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	PAT	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	PCD	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	PCD	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	PCD	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	PLA	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	PLA	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	PLA	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Table A.4.2 Risk-Based Rankings - Foreign Flag, MSO, Relative Frequency, Deaths

Bin			Level III Intervention Strategy Importance									
District	MSO	Service	Cargo/Poll.	Steering	Documents	Drills	Auxiliary Sys.	Power Plant	Fire Prevention	Hull	Lifesaving	Other
9	BUF	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
9	BUF	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
9	BUF	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
9	CHI	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
9	CHI	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
9	CHI	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
9	CLE	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
9	CLE	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
9	CLE	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
9	DET	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
9	DET	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
9	DET	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
9	DUL	FREIGHTER	0.0039	0.0054	0.0000	0.0023	0.0000	0.0000	0.0008	0.0008	0.0000	0.0000
9	DUL	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
9	DUL	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
9	MAS	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
9	MAS	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
9	MAS	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
9	MIL	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Table A.4.2 Risk-Based Rankings - Foreign Flag, MSO, Relative Frequency, Deaths

Bin			Level III Intervention Strategy Importance									
District	MSO	Service	Cargo/Poll.	Steering	Documents	Drills	Auxiliary Sys.	Power Plant	Fire Prevention	Hull	Lifeaving	Other
9	MIL	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
9	MIL	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
9	SIM	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
9	SIM	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
9	SIM	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
9	SSM	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
9	SSM	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
9	SSM	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
9	STB	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
9	STB	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
9	STB	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
9	TOL	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
9	TOL	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
9	TOL	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
11	CON	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
11	CON	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
11	CON	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
11	LOS	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
11	LOS	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Table A.4.2 Risk-Based Rankings - Foreign Flag, MSO, Relative Frequency, Deaths

Bin		Level III Intervention Strategy Importance										
District	MSO	Service	Cargo/Poll.	Steering	Documents	Drills	Auxiliary Sys.	Power Plant	Fire Prevention	Hull	Lifesaving	Other
11	LOS	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
11	SBC	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
11	SBC	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
11	SBC	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
11	SDC	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
11	SDC	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
11	SDC	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
11	SFC	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
11	SFC	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
11	SFC	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
13	GRA	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
13	GRA	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
13	GRA	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
13	POR	FREIGHTER	0.0247	0.0185	0.0000	0.0062	0.0000	0.0046	0.0015	0.0015	0.0000	0.0062
13	POR	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
13	POR	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
13	SEA	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
13	SEA	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
13	SEA	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Table A.4.2 Risk-Based Rankings - Foreign Flag, MSO, Relative Frequency, Deaths

Bin			Level III Intervention Strategy Importance									
District	MSO	Service	Cargo/Pol.	Steering	Documents	Drills	Auxiliary Sys.	Power Plant	Fire Prevention	Hull	Lifeaving	Other
14	ASO	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
14	ASO	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
14	ASO	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
14	GUA	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
14	GUA	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
14	GUA	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
14	HON	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Bad Data 14	HON	PASSENGER	0.0031	0.0023	0.0000	0.0162	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
14	HON	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
17	ANC	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
17	ANC	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
17	ANC	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
17	DHA	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
17	DHA	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
17	DHA	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
17	JUN	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
17	JUN	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
17	JUN	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Table A.4.2 Risk-Based Rankings - Foreign Flag, MSO, Relative Frequency, Deaths

Bin			Level III Intervention Strategy Importance									
District	MSO	Service	Cargo/Poll.	Steering	Documents	Drills	Auxiliary Sys.	Power Plant	Fire Prevention	Hull	Lifesaving	Other
17	KEN	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
17	KEN	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
17	KEN	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
17	KET	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
17	KET	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
17	KET	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
17	KOD	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
17	KOD	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
17	KOD	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
17	SIT	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
17	SIT	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
17	SIT	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
17	VAL	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
17	VAL	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
17	VAL	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Table A.4.3 Risk-Based Rankings - Foreign Flag, MSO, Relative Frequency, Injuries

Table A.4.3 Risk-Based Rankings - Foreign Flag, MSO, Relative Frequency, Injuries												
Bin			Level III Intervention Strategy Importance									
District	MSO	Service	Cargo/Pol.	Steering	Documents	Drills	Auxiliary Sys.	Power Plant	Fire	Hull	Lifesaving	Other
1	BOS	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1	BOS	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1	BOS	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1	LIS	FREIGHTER	0.0023	0.0031	0.0000	0.0008	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1	LIS	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1	LIS	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1	NYC	FREIGHTER	0.0324	0.0247	0.0000	0.0031	0.0000	0.0031	0.0046	0.0015	0.0000	0.0015
1	NYC	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1	NYC	TANKER	0.0154	0.0069	0.0000	0.0008	0.0000	0.0023	0.0000	0.0000	0.0000	0.0000
1	POM	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1	POM	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1	POM	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1	PRO	FREIGHTER	0.0031	0.0046	0.0000	0.0008	0.0000	0.0000	0.0000	0.0008	0.0000	0.0000
1	PRO	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1	PRO	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	ALL MSOs	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	ALL MSOs	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	ALL MSOs	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000



Table A.4.3 Risk-Based Rankings - Foreign Flag, MSO, Relative Frequency, Injuries

Bin		Level III Intervention Strategy Importance										
District	MSO	Service	Cargo/Pol.	Steering	Documents	Drills	Auxiliary Sys.	Power Plant	Fire	Hull	Lifesaving	Other
5	BAL	FREIGHTER	0.0124	0.0185	0.0000	0.0031	0.0000	0.0015	0.0000	0.0015	0.0000	0.0000
5	BAL	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5	BAL	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5	HMR	FREIGHTER	0.0093	0.0093	0.0000	0.0015	0.0000	0.0008	0.0000	0.0008	0.0000	0.0008
5	HMR	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5	HMR	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5	PHI	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5	PHI	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5	PHI	TANKER	0.0170	0.0046	0.0000	0.0031	0.0000	0.0000	0.0000	0.0000	0.0000	0.0031
5	WNC	FREIGHTER	0.0031	0.0023	0.0000	0.0008	0.0000	0.0008	0.0000	0.0000	0.0000	0.0008
5	WNC	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5	WNC	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	CHA	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	CHA	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	CHA	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	JAC	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	JAC	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	JAC	TANKER	0.0031	0.0008	0.0000	0.0008	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	MIA	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Table A.4.3 Risk-Based Rankings - Foreign Flag, MSO, Relative Frequency, Injuries

Bin		Level III Intervention Strategy Importance										
District	MSO	Service	Cargo/Pol.	Steering	Documents	Drills	Auxiliary Sys.	Power Plant	Fire	Hull	Lifewing	Other
7	MIA	PASSENGER	0.0185	0.0000	0.0000	0.0093	0.0000	0.0000	0.0031	0.0000	0.0000	0.0000
7	MIA	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	PTC	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	PTC	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	PTC	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	SAV	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	SAV	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	SAV	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	SJP	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	SJP	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	SJP	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	STC	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	STC	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	STC	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	STT	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	STT	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	STT	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	TAM	FREIGHTER	0.0085	0.0054	0.0000	0.0008	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	TAM	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Table A.4.3 Risk-Based Rankings - Foreign Flag, MSO, Relative Frequency, Injuries

Bin		Level III Intervention Strategy Importance										
District	MSO	Service	Cargo/Pol.	Steering	Documents	Drills	Auxiliary Sys.	Power Plant	Fire	Hull	Lifesaving	Other
7	TAM	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	BAT	FREIGHTER	0.0039	0.0054	0.0000	0.0008	0.0000	0.0015	0.0000	0.0000	0.0000	0.0008
8	BAT	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	BAT	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	BRN	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	BRN	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	BRN	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	COR	FREIGHTER	0.0085	0.0077	0.0000	0.0008	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	COR	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	COR	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	GAL	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	GAL	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	GAL	TANKER	0.0077	0.0093	0.0000	0.0015	0.0000	0.0008	0.0015	0.0008	0.0000	0.0000
8	HOU	FREIGHTER	0.0371	0.0448	0.0000	0.0046	0.0000	0.0031	0.0000	0.0031	0.0000	0.0015
8	HOU	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	HOU	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	LKC	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	LKC	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	LKC	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Table A.4.3 Risk-Based Rankings - Foreign Flag, MSO, Relative Frequency, Injuries

Bin			Level III Intervention Strategy Importance									
District	MSO	Service	Cargo/Poll.	Steering	Documents	Drills	Auxiliary Sys.	Power Plant	Fire	Hull	Liferaing	Other
8	MOB	FREIGHTER	0.0100	0.0077	0.0000	0.0023	0.0000	0.0008	0.0000	0.0015	0.0000	0.0008
8	MOB	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	MOB	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	MOR	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	MOR	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	MOR	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	NEW	FREIGHTER	0.0170	0.0293	0.0000	0.0077	0.0000	0.0093	0.0000	0.0000	0.0000	0.0046
8	NEW	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	NEW	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	PAT	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	PAT	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	PAT	TANKER	0.0432	0.0494	0.0000	0.0185	0.0000	0.0062	0.0000	0.0124	0.0000	0.0062
8	PCD	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	PCD	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	PCD	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	PLA	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	PLA	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	PLA	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
9	BUF	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Table A.4.3 Risk-Based Rankings - Foreign Flag, MSO, Relative Frequency, Injuries

Bin			Level III Intervention Strategy Importance									
District	MSO	Service	Cargo/Pol.	Steering	Documents	Drills	Auxiliary Sys.	Power Plant	Fire	Hull	Lifesaving	Other
9	BUF	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
9	BUF	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
9	CHI	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
9	CHI	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
9	CHI	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
9	CLE	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
9	CLE	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
9	CLE	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
9	DET	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
9	DET	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
9	DET	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
9	DUL	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
9	DUL	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
9	DUL	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
9	MAS	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
9	MAS	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
9	MAS	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
9	MIL	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
9	MIL	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Table A.4.3 Risk-Based Rankings - Foreign Flag, MSO, Relative Frequency, Injuries

Bin			Level III Intervention Strategy Importance									
District	MSO	Service	Cargo/Pol.	Steering	Documents	Drills	Auxiliary Sys.	Power Plant	Fire	Hull	Lifeseaving	Other
9	MIL	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
9	SIM	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
9	SIM	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
9	SIM	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
9	SSM	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
9	SSM	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
9	SSM	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
9	STB	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
9	STB	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
9	STB	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
9	TOL	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
9	TOL	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
9	TOL	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
11	CON	FREIGHTER	0.0015	0.0031	0.0000	0.0008	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
11	CON	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
11	CON	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
11	LOS	FREIGHTER	0.0278	0.0324	0.0000	0.0093	0.0000	0.0046	0.0000	0.0023	0.0000	0.0046
11	LOS	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
11	LOS	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Table A.4.3 Risk-Based Rankings - Foreign Flag, MSO, Relative Frequency, Injuries

Bin			Level III Intervention Strategy Importance									
District	MSO	Service	Cargo/Pol.	Steering	Documents	Drills	Auxiliary Sys.	Power Plant	Fire	Hull	Lifesaving	Other
11	SBC	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
11	SBC	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
11	SBC	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
11	SDC	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
11	SDC	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
11	SDC	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
11	SFC	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
11	SFC	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
11	SFC	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
13	GRA	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
13	GRA	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
13	GRA	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
13	POR	FREIGHTER	0.0124	0.0093	0.0000	0.0031	0.0000	0.0023	0.0008	0.0008	0.0000	0.0031
13	POR	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
13	POR	TANKER	0.0015	0.0000	0.0000	0.0008	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
13	SEA	FREIGHTER	0.0077	0.0046	0.0000	0.0008	0.0000	0.0000	0.0008	0.0000	0.0000	0.0000
13	SEA	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
13	SEA	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
14	ASO	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Table A.4.3 Risk-Based Rankings - Foreign Flag, MSO, Relative Frequency, Injuries

Bin		Level III Intervention Strategy Importance										
District	MSO	Service	Cargo/Poll.	Steering	Documents	Drills	Auxiliary Sys.	Power Plant	Fire	Hull	Lifesaving	Other
14	ASO	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
14	ASO	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
14	GUA	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
14	GUA	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
14	GUA	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
14	HON	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Bad Data 14	HON	PASSENGER	0.0741	0.0556	0.0000	0.3892	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
14	HON	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
17	ANC	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
17	ANC	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
17	ANC	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
17	DHA	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
17	DHA	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
17	DHA	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
17	JUN	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
17	JUN	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
17	JUN	TANKER	0.0000	0.0000	0.0000	0.0008	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
17	KEN	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
17	KEN	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000



Table A.4.3 Risk-Based Rankings - Foreign Flag, MSO, Relative Frequency, Injuries

Bin			Level III Intervention Strategy Importance									
District	MSO	Service	Cargo/Poll.	Steering	Documents	Drills	Auxiliary Sys.	Power Plant	Fire	Hull	Lifesaving	Other
17	KEN	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
17	KET	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
17	KET	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
17	KET	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
17	KOD	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
17	KOD	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
17	KOD	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
17	SIT	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
17	SIT	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
17	SIT	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
17	VAL	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
17	VAL	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
17	VAL	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Table A.4.4 Risk-Based Rankings - Foreign Flag, MSO, Relative Frequency, Property Loss

Table A.4.4 Risk-Based Rankings - Foreign Flag, MSO, Relative Frequency, Property Loss										
Bin			Level III Intervention Strategy Importance							
District	MSO	Service	Cargo/Poll.	Steering	Documents	Drills	Auxiliary Sys.	Power Plant	Fire Prevention	Other
1	BOS	FREIGHTER	\$1,469	\$5,875	\$0	\$0	\$0	\$0	\$0	\$734
1	BOS	PASSENGER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
1	BOS	TANKER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
1	LIS	FREIGHTER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
1	LIS	PASSENGER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
1	LIS	TANKER	\$93	\$185	\$0	\$0	\$0	\$0	\$0	\$0
1	NYC	FREIGHTER	\$10,066	\$7,669	\$0	\$959	\$0	\$959	\$1,438	\$479
1	NYC	PASSENGER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
1	NYC	TANKER	\$1,544	\$695	\$0	\$77	\$0	\$232	\$0	\$0
1	POM	FREIGHTER	\$131	\$394	\$0	\$0	\$0	\$0	\$0	\$0
1	POM	PASSENGER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
1	POM	TANKER	\$263	\$53	\$0	\$0	\$0	\$0	\$0	\$0
1	PRO	FREIGHTER	\$94	\$141	\$0	\$24	\$0	\$0	\$0	\$0
1	PRO	PASSENGER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
1	PRO	TANKER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2	ALL MSOs	FREIGHTER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2	ALL MSOs	PASSENGER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0

Table A.4.4 Risk-Based Rankings - Foreign Flag, MSO, Relative Frequency, Property Loss

Bin			Level III Intervention Strategy Importance									
District	MSO	Service	Cargo/Pol.	Steering	Documents	Drills	Auxiliary Sys.	Power Plant	Fire Prevention	Hull	Lifesaving	Other
2	ALL MSOs	TANKER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
5	BAL	FREIGHTER	\$3,651	\$5,476	\$0	\$913	\$0	\$456	\$0	\$456	\$0	\$0
5	BAL	PASSENGER		\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
5	BAL	TANKER		\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
5	HMR	FREIGHTER	\$372	\$372	\$0	\$62	\$0	\$31	\$0	\$31	\$0	\$31
5	HMR	PASSENGER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
5	HMR	TANKER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
5	PHI	FREIGHTER	\$19,058	\$15,485	\$0	\$1,191	\$0	\$0	\$0	\$1,191	\$0	\$0
5	PHI	PASSENGER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
5	PHI	TANKER	\$978	\$267	\$0	\$178	\$0	\$0	\$0	\$0	\$0	\$178
5	WNC	FREIGHTER	\$185	\$139	\$0	\$46	\$0	\$46	\$0	\$0	\$0	\$46
5	WNC	PASSENGER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
5	WNC	TANKER	\$347	\$927	\$0	\$116	\$0	\$0	\$0	\$0	\$0	\$0
7	CHA	FREIGHTER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
7	CHA	PASSENGER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
7	CHA	TANKER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
7	JAC	FREIGHTER	\$936	\$156	\$0	\$0	\$0	\$0	\$0	\$156	\$0	\$156
7	JAC	PASSENGER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
7	JAC	TANKER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0

Table A.4.4 Risk-Based Rankings - Foreign Flag, MSO, Relative Frequency, Property Loss

Bin			Level III Intervention Strategy Importance									
District	MSO	Service	Cargo/Poll.	Steering	Documents	Drills	Auxiliary Sys.	Power Plant	Fire Prevention	Hull	Liferaing	Other
7	MIA	FREIGHTER	\$33,974	\$13,239	\$0	\$827	\$0	\$0	\$0	\$4,137	\$0	\$827
7	MIA	PASSENGER	\$46	\$0	\$0	\$23	\$0	\$0	\$8	\$0	\$0	\$0
7	MIA	TANKER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
7	PTC	FREIGHTER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
7	PTC	PASSENGER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
7	PTC	TANKER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
7	SAV	FREIGHTER	\$284	\$150	\$0	\$0	\$0	\$50	\$17	\$0	\$0	\$17
7	SAV	PASSENGER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
7	SAV	TANKER	\$0	\$116	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
7	SIP	FREIGHTER	\$25,715	\$18,001	\$0	\$0	\$0	\$0	\$2,572	\$0	\$0	\$0
7	SIP	PASSENGER	\$8	\$15	\$0	\$0	\$0	\$8	\$8	\$0	\$0	\$0
7	SIP	TANKER	\$100	\$46	\$0	\$0	\$0	\$0	\$0	\$8	\$0	\$0
7	STC	FREIGHTER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
7	STC	PASSENGER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
7	STC	TANKER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
7	STT	FREIGHTER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
7	STT	PASSENGER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
7	STT	TANKER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
7	TAM	FREIGHTER	\$229	\$146	\$0	\$21	\$0	\$0	\$0	\$0	\$0	\$0

Table A.4.4 Risk-Based Rankings - Foreign Flag, MSO, Relative Frequency, Property Loss

Bin		Level III Intervention Strategy Importance										
District	MSO	Service	Cargo/Pol.	Steering	Documents	Drills	Auxiliary Sys.	Power Plant	Fire Prevention	Hull	Lifeseaving	Other
7	TAM	PASSENGER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
7	TAM	TANKER	\$1	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
8	BAT	FREIGHTER	\$135	\$189	\$0	\$27	\$0	\$54	\$0	\$0	\$0	\$27
8	BAT	PASSENGER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
8	BAT	TANKER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
8	BRN	FREIGHTER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
8	BRN	PASSENGER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
8	BRN	TANKER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
8	COR	FREIGHTER	\$4,375	\$3,977	\$0	\$398	\$0	\$0	\$0	\$0	\$0	\$0
8	COR	PASSENGER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
8	COR	TANKER	\$1,442	\$1,282	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$160
8	GAL	FREIGHTER	\$1,036	\$2,901	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
8	GAL	PASSENGER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
8	GAL	TANKER	\$660	\$792	\$0	\$132	\$0	\$66	\$132	\$66	\$0	\$0
8	HOU	FREIGHTER	\$32,817	\$39,654	\$0	\$4,102	\$0	\$2,735	\$0	\$2,735	\$0	\$1,367
8	HOU	PASSENGER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
8	HOU	TANKER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
8	LKC	FREIGHTER	\$222	\$776	\$0	\$0	\$0	\$111	\$0	\$0	\$0	\$111
8	LKC	PASSENGER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0

Table A.4.4 Risk-Based Rankings - Foreign Flag, MSO, Relative Frequency, Property Loss

Bin			Level III Intervention Strategy Importance									
District	MSO	Service	Cargo/Pol.	Steering	Documents	Drills	Auxiliary Sys.	Power Plant	Fire Prevention	Hull	Lifesaving	Other
8	LKC	TANKER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
8	MOB	FREIGHTER	\$108	\$83	\$0	\$25	\$0	\$8	\$0	\$17	\$0	\$8
8	MOB	PASSENGER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
8	MOB	TANKER	\$355	\$355	\$0	\$178	\$0	\$0	\$0	\$0	\$0	\$0
8	MOR	FREIGHTER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
8	MOR	PASSENGER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
8	MOR	TANKER	\$17	\$8	\$0	\$0	\$0	\$0	\$8	\$0	\$0	\$0
8	NEW	FREIGHTER	\$23,619	\$40,797	\$0	\$10,736	\$0	\$12,883	\$0	\$0	\$0	\$6,442
8	NEW	PASSENGER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
8	NEW	TANKER	\$3,687	\$3,687	\$0	\$819	\$0	\$0	\$1,229	\$410	\$0	\$819
8	PAT	FREIGHTER	\$383	\$85	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$43
8	PAT	PASSENGER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
8	PAT	TANKER	\$1,408	\$1,609	\$0	\$603	\$0	\$201	\$0	\$402	\$0	\$201
8	PCD	FREIGHTER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
8	PCD	PASSENGER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
8	PCD	TANKER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
8	PLA	FREIGHTER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
8	PLA	PASSENGER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
8	PLA	TANKER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0

Table A.4.4 Risk-Based Rankings - Foreign Flag, MSO, Relative Frequency, Property Loss

Bin			Level III Intervention Strategy Importance									
District	MSO	Service	Cargo/Pol.	Steering	Documents	Drills	Auxiliary Sys.	Power Plant	Fire Prevention	Hull	Lifesaving	Other
9	BUF	FREIGHTER	\$0	\$15	\$0	\$0	\$0	\$0	\$0	\$15	\$0	\$0
9	BUF	PASSENGER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
9	BUF	TANKER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
9	CHI	FREIGHTER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
9	CHI	PASSENGER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
9	CHI	TANKER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
9	CLE	FREIGHTER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
9	CLE	PASSENGER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
9	CLE	TANKER	\$0	\$193	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
9	DET	FREIGHTER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
9	DET	PASSENGER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
9	DET	TANKER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
9	DUL	FREIGHTER	\$2,139	\$2,995	\$0	\$1,284	\$0	\$0	\$428	\$428	\$0	\$0
9	DUL	PASSENGER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
9	DUL	TANKER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
9	MAS	FREIGHTER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
9	MAS	PASSENGER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
9	MAS	TANKER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
9	MIL	FREIGHTER	\$0	\$116	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0

Table A.4.4 Risk-Based Rankings - Foreign Flag, MSO, Relative Frequency, Property Loss

Bin			Level III Intervention Strategy Importance									
District	MSO	Service	Cargo/Pol.	Steering	Documents	Drills	Auxiliary Sys.	Power Plant	Fire Prevention	Hull	Lifesaving	Other
9	MIL	PASSENGER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
9	MIL	TANKER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
9	SIM	FREIGHTER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
9	SIM	PASSENGER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
9	SIM	TANKER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
9	SSM	FREIGHTER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
9	SSM	PASSENGER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
9	SSM	TANKER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
9	STB	FREIGHTER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
9	STB	PASSENGER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
9	STB	TANKER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
9	TOL	FREIGHTER	\$1,531	\$7,654	\$0	\$0	\$0	\$0	\$765	\$765	\$0	\$0
9	TOL	PASSENGER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
9	TOL	TANKER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
11	CON	FREIGHTER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
11	CON	PASSENGER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
11	CON	TANKER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
11	LOS	FREIGHTER	\$66,511	\$77,596	\$0	\$22,170	\$0	\$11,085	\$0	\$5,543	\$0	\$11,085
11	LOS	PASSENGER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0



Table A.4.4 Risk-Based Rankings - Foreign Flag, MSO, Relative Frequency, Property Loss

Bin			Level III Intervention Strategy Importance									
District	MSO	Service	Cargo/Polli.	Steering	Documents	Drills	Auxiliary Sys.	Power Plant	Fire Prevention	Hull	Liferaing	Other
11	LOS	TANKER	\$77	\$154	\$0	\$0	\$0	\$39	\$0	\$0	\$0	\$0
11	SBC	FREIGHTER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
11	SBC	PASSENGER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
11	SBC	TANKER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
11	SDC	FREIGHTER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
11	SDC	PASSENGER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
11	SDC	TANKER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
11	SFC	FREIGHTER	\$3,160	\$1,129	\$0	\$451	\$0	\$226	\$226	\$226	\$0	\$0
11	SFC	PASSENGER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
11	SFC	TANKER	\$772	\$193	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
13	GRA	FREIGHTER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
13	GRA	PASSENGER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
13	GRA	TANKER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
13	POR	FREIGHTER	\$3,380	\$2,535	\$0	\$845	\$0	\$634	\$211	\$211	\$0	\$845
13	POR	PASSENGER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
13	POR	TANKER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
13	SEA	FREIGHTER	\$626	\$376	\$0	\$63	\$0	\$0	\$63	\$0	\$0	\$0
13	SEA	PASSENGER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
13	SEA	TANKER	\$8	\$8	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0

Table A.4.4 Risk-Based Rankings - Foreign Flag, MSO, Relative Frequency, Property Loss												
Bin			Level III Intervention Strategy Importance									
District	MSO	Service	Cargo/Pol.	Steering	Documents	Drills	Auxiliary Sys.	Power Plant	Fire Prevention	Hull	Lifeseaving	Other
14	ASO	FREIGHTER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
14	ASO	PASSENGER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
14	ASO	TANKER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
14	GUA	FREIGHTER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
14	GUA	PASSENGER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
14	GUA	TANKER	\$0	\$0	\$0	\$0	\$0	\$0	\$23	\$0	\$0	\$0
14	HON	FREIGHTER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Bad Data 14	HON	PASSENGER	\$40,154	\$30,116	\$0	\$210,811	\$0	\$0	\$0	\$0	\$0	\$0
14	HON	TANKER	\$642	\$161	\$0	\$0	\$0	\$0	\$321	\$0	\$0	\$161
17	ANC	FREIGHTER	\$232	\$0	\$0	\$0	\$0	\$0	\$0	\$232	\$0	\$0
17	ANC	PASSENGER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
17	ANC	TANKER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
17	DHA	FREIGHTER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
17	DHA	PASSENGER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
17	DHA	TANKER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
17	JUN	FREIGHTER	\$12	\$30	\$0	\$0	\$0	\$0	\$0	\$6	\$0	\$0
17	JUN	PASSENGER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
17	JUN	TANKER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0

Table A.4.4 Risk-Based Rankings - Foreign Flag, MSO, Relative Frequency, Property Loss												
Bin				Level III Intervention Strategy Importance								
District	MSO	Service	Cargo/Poll.	Steering	Documents	Drills	Auxiliary Sys.	Power Plant	Fire Prevention	Hull	Lifesaving	Other
17	KEN	FREIGHTER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
17	KEN	PASSENGER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
17	KEN	TANKER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
17	KET	FREIGHTER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
17	KET	PASSENGER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
17	KET	TANKER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
17	KOD	FREIGHTER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
17	KOD	PASSENGER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
17	KOD	TANKER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
17	SIT	FREIGHTER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
17	SIT	PASSENGER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
17	SIT	TANKER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
17	VAL	FREIGHTER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
17	VAL	PASSENGER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
17	VAL	TANKER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0

Table A.4.5 Risk-Based Rankings - Foreign Flag, MSO, Relative Frequency, Pollution

Bin		Level III Intervention Strategy Importance										
District	MSO	Service	Cargo/Poll.	Steering	Documents	Drills	Auxiliary Sys.	Power Plant	Fire Prevention	Hull	Lifesaving	Other
1	BOS	FREIGHTER	0	0	0	0	0	0	0	0	0	0
1	BOS	PASSENGER	0	0	0	0	0	0	0	0	0	0
1	BOS	TANKER	0	0	0	0	0	0	0	0	0	0
1	LIS	FREIGHTER	0	0	0	0	0	0	0	0	0	0
1	LIS	PASSENGER	0	0	0	0	0	0	0	0	0	0
1	LIS	TANKER	0	0	0	0	0	0	0	0	0	0
1	NYC	FREIGHTER	12	9	0	1	0	1	2	1	0	1
1	NYC	PASSENGER	0	0	0	0	0	0	0	0	0	0
1	NYC	TANKER	17	8	0	1	0	3	0	0	0	0
1	POM	FREIGHTER	0	0	0	0	0	0	0	0	0	0
1	POM	PASSENGER	0	0	0	0	0	0	0	0	0	0
1	POM	TANKER	382	76	0	0	0	0	0	0	0	0
1	PRO	FREIGHTER	0	0	0	0	0	0	0	0	0	0
1	PRO	PASSENGER	0	0	0	0	0	0	0	0	0	0
1	PRO	TANKER	1	0	0	0	0	0	0	0	0	0
2	ALL MSO <sub>1</sub>	FREIGHTER	0	0	0	0	0	0	0	0	0	0
2	ALL MSO <sub>1</sub>	PASSENGER	0	0	0	0	0	0	0	0	0	0

Table A.4.5 Risk-Based Rankings - Foreign Flag, MSO, Relative Frequency, Pollution

Bin			Level III Intervention Strategy Importance									
District	MSO	Service	Cargo/Poll.	Steering	Documents	Drills	Auxiliary Sys.	Power Plant	Fire Prevention	Hull	Lifesaving	Other
2	ALL MSOs	TANKER	0	0	0	0	0	0	0	0	0	0
5	BAL	FREIGHTER	31	47	0	8	0	4	0	4	0	0
5	BAL	PASSENGER	0	0	0	0	0	0	0	0	0	0
5	BAL	TANKER	1	1	0	0	0	0	0	0	0	0
5	HMR	FREIGHTER	9	9	0	1	0	1	0	1	0	1
5	HMR	PASSENGER	0	0	0	0	0	0	0	0	0	0
5	HMR	TANKER	87	43	0	11	0	0	0	0	0	0
5	PHI	FREIGHTER	11	9	0	1	0	0	0	1	0	0
5	PHI	PASSENGER	0	0	0	0	0	0	0	0	0	0
5	PHI	TANKER	6	2	0	1	0	0	0	0	0	1
5	WNC	FREIGHTER	2	1	0	0	0	0	0	0	0	0
5	WNC	PASSENGER	0	0	0	0	0	0	0	0	0	0
5	WNC	TANKER	0	0	0	0	0	0	0	0	0	0
7	CHA	FREIGHTER	15	1	0	0	0	0	0	0	0	0
7	CHA	PASSENGER	0	0	0	0	0	0	0	0	0	0
7	CHA	TANKER	0	0	0	0	0	0	0	0	0	0
7	JAC	FREIGHTER	1	0	0	0	0	0	0	0	0	0
7	JAC	PASSENGER	0	0	0	0	0	0	0	0	0	0
7	JAC	TANKER	2	1	0	1	0	0	0	0	0	0

Table A.4.5 Risk-Based Rankings - Foreign Flag, MSO, Relative Frequency, Pollution

Bin			Level III Intervention Strategy Importance									
District	MSO	Service	Cargo/Poll.	Steering	Documents	Drills	Auxiliary Sys.	Power Plant	Fire Prevention	Hull	Lifesaving	Other
7	MIA	FREIGHTER	4770	1861	0	116	0	0	0	582	0	116
7	MIA	PASSENGER	1	0	0	1	0	0	0	0	0	0
7	MIA	TANKER	0	0	0	0	0	0	0	0	0	0
7	PTC	FREIGHTER	0	0	0	0	0	0	0	0	0	0
7	PTC	PASSENGER	0	0	0	0	0	0	0	0	0	0
7	PTC	TANKER	0	0	0	0	0	0	0	0	0	0
7	SAV	FREIGHTER	15	8	0	0	0	3	1	0	0	1
7	SAV	PASSENGER	0	0	0	0	0	0	0	0	0	0
7	SAV	TANKER	0	0	0	0	0	0	0	0	0	0
7	SIP	FREIGHTER	1	1	0	0	0	0	0	0	0	0
7	SIP	PASSENGER	0	0	0	0	0	0	0	0	0	0
7	SIP	TANKER	30	14	0	0	0	0	0	2	0	0
7	STC	FREIGHTER	0	0	0	0	0	0	0	0	0	0
7	STC	PASSENGER	0	0	0	0	0	0	0	0	0	0
7	STC	TANKER	0	0	0	0	0	0	0	0	0	0
7	STT	FREIGHTER	0	0	0	0	0	0	0	0	0	0
7	STT	PASSENGER	0	0	0	0	0	0	0	0	0	0
7	STT	TANKER	0	0	0	0	0	0	0	0	0	0
7	TAM	FREIGHTER	5	3	0	0	0	0	0	0	0	0

Table A.4.5 Risk-Based Rankings - Foreign Flag, MSO, Relative Frequency, Pollution												
Bin			Level III Intervention Strategy Importance									
District	MSO	Service	Cargo/Poll.	Steering	Documents	Drills	Auxiliary Sys.	Power Plant	Fire Prevention	Hull	Liferaing	Other
7	TAM	PASSENGER	0	0	0	0	0	0	0	0	0	0
7	TAM	TANKER	1	0	0	0	0	0	0	0	0	0
8	BAT	FREIGHTER	8	11	0	2	0	3	0	0	0	2
8	BAT	PASSENGER	0	0	0	0	0	0	0	0	0	0
8	BAT	TANKER	0	0	0	0	0	0	0	0	0	0
8	BRN	FREIGHTER	0	0	0	0	0	0	0	0	0	0
8	BRN	PASSENGER	0	0	0	0	0	0	0	0	0	0
8	BRN	TANKER	0	0	0	0	0	0	0	0	0	0
8	COR	FREIGHTER	11	10	0	1	0	0	0	0	0	0
8	COR	PASSENGER	0	0	0	0	0	0	0	0	0	0
8	COR	TANKER	149	133	0	0	0	0	0	0	0	17
8	GAL	FREIGHTER	3	7	0	0	0	0	0	0	0	0
8	GAL	PASSENGER	0	0	0	0	0	0	0	0	0	0
8	GAL	TANKER	31	37	0	6	0	3	6	3	0	0
8	HOU	FREIGHTER	4688	5665	0	586	0	391	0	391	0	195
8	HOU	PASSENGER	0	0	0	0	0	0	0	0	0	0
8	HOU	TANKER	0	0	0	0	0	0	0	0	0	0
8	LKC	FREIGHTER	0	0	0	0	0	0	0	0	0	0
8	LKC	PASSENGER	0	0	0	0	0	0	0	0	0	0

Table A.4.5 Risk-Based Rankings - Foreign Flag, MSO, Relative Frequency, Pollution

Bin			Level III Intervention Strategy Importance									
District	MSO	Service	Cargo/Poll.	Steering	Documents	Drills	Auxiliary Sys.	Power Plant	Fire Prevention	Hull	Lifesaving	Other
8	LKC	TANKER	0	0	0	0	0	0	0	0	0	0
8	MOB	FREIGHTER	17	13	0	4	0	1	0	3	0	1
8	MOB	PASSENGER	0	0	0	0	0	0	0	0	0	0
8	MOB	TANKER	3	3	0	2	0	0	0	0	0	0
8	MOR	FREIGHTER	0	0	0	0	0	0	0	0	0	0
8	MOR	PASSENGER	0	0	0	0	0	0	0	0	0	0
8	MOR	TANKER	0	0	0	0	0	0	0	0	0	0
8	NEW	FREIGHTER	5	9	0	2	0	3	0	0	0	1
8	NEW	PASSENGER	0	0	0	0	0	0	0	0	0	0
8	NEW	TANKER	11	11	0	2	0	0	4	1	0	2
8	PAT	FREIGHTER	6	1	0	0	0	0	0	0	0	1
8	PAT	PASSENGER	0	0	0	0	0	0	0	0	0	0
8	PAT	TANKER	65	74	0	28	0	9	0	19	0	9
8	PCD	FREIGHTER	0	0	0	0	0	0	0	0	0	0
8	PCD	PASSENGER	0	0	0	0	0	0	0	0	0	0
8	PCD	TANKER	0	0	0	0	0	0	0	0	0	0
8	PLA	FREIGHTER	0	0	0	0	0	0	0	0	0	0
8	PLA	PASSENGER	0	0	0	0	0	0	0	0	0	0
8	PLA	TANKER	0	0	0	0	0	0	0	0	0	0



Table A.4.5 Risk-Based Rankings - Foreign Flag, MSO, Relative Frequency, Pollution

Bin			Level III Intervention Strategy Importance									
District	MSO	Service	Cargo/Poll.	Steering	Documents	Drills	Auxiliary Sys.	Power Plant	Fire Prevention	Hull	Lifesaving	Other
9	BUF	FREIGHTER	0	0	0	0	0	0	0	0	0	0
9	BUF	PASSENGER	0	0	0	0	0	0	0	0	0	0
9	BUF	TANKER	0	0	0	0	0	0	0	0	0	0
9	CHI	FREIGHTER	0	0	0	0	0	0	0	0	0	0
9	CHI	PASSENGER	0	0	0	0	0	0	0	0	0	0
9	CHI	TANKER	0	0	0	0	0	0	0	0	0	0
9	CLE	FREIGHTER	0	0	0	0	0	0	0	0	0	0
9	CLE	PASSENGER	0	0	0	0	0	0	0	0	0	0
9	CLE	TANKER	0	0	0	0	0	0	0	0	0	0
9	DET	FREIGHTER	0	0	0	0	0	0	0	0	0	0
9	DET	PASSENGER	0	0	0	0	0	0	0	0	0	0
9	DET	TANKER	0	0	0	0	0	0	0	0	0	0
9	DUL	FREIGHTER	0	1	0	0	0	0	0	0	0	0
9	DUL	PASSENGER	0	0	0	0	0	0	0	0	0	0
9	DUL	TANKER	0	0	0	0	0	0	0	0	0	0
9	MAS	FREIGHTER	0	0	0	0	0	0	0	0	0	0
9	MAS	PASSENGER	0	0	0	0	0	0	0	0	0	0
9	MAS	TANKER	0	0	0	0	0	0	0	0	0	0
9	MIL	FREIGHTER	0	0	0	0	0	0	0	0	0	0

Table A.4.5 Risk-Based Rankings - Foreign Flag, MSO, Relative Frequency, Pollution

Bin			Level III Intervention Strategy Importance									
District	MSO	Service	Cargo/Poll.	Steering	Documents	Drills	Auxiliary Sys.	Power Plant	Fire Prevention	Hull	Lifesaving	Other
9	MIL	PASSENGER	0	0	0	0	0	0	0	0	0	0
9	MIL	TANKER	0	0	0	0	0	0	0	0	0	0
9	SIM	FREIGHTER	0	0	0	0	0	0	0	0	0	0
9	SIM	PASSENGER	0	0	0	0	0	0	0	0	0	0
9	SIM	TANKER	0	0	0	0	0	0	0	0	0	0
9	SSM	FREIGHTER	0	0	0	0	0	0	0	0	0	0
9	SSM	PASSENGER	0	0	0	0	0	0	0	0	0	0
9	SSM	TANKER	0	0	0	0	0	0	0	0	0	0
9	STB	FREIGHTER	0	0	0	0	0	0	0	0	0	0
9	STB	PASSENGER	0	0	0	0	0	0	0	0	0	0
9	STB	TANKER	0	0	0	0	0	0	0	0	0	0
9	TOL	FREIGHTER	0	0	0	0	0	0	0	0	0	0
9	TOL	PASSENGER	0	0	0	0	0	0	0	0	0	0
9	TOL	TANKER	0	0	0	0	0	0	0	0	0	0
11	CON	FREIGHTER	10	20	0	5	0	0	0	0	0	0
11	CON	PASSENGER	0	0	0	0	0	0	0	0	0	0
11	CON	TANKER	0	0	0	0	0	0	0	0	0	0
11	LOS	FREIGHTER	9	11	0	3	0	2	0	1	0	2
11	LOS	PASSENGER	0	0	0	0	0	0	0	0	0	0

Table A.4.5 Risk-Based Rankings - Foreign Flag, MSO, Relative Frequency, Pollution

Bin			Level III Intervention Strategy Importance									
District	MSO	Service	Cargo/Poll.	Steering	Documents	Drills	Auxiliary Sys.	Power Plant	Fire Prevention	Hull	Lifesaving	Other
11	LOS	TANKER	0	1	0	0	0	0	0	0	0	0
11	SBC	FREIGHTER	0	0	0	0	0	0	0	0	0	0
11	SBC	PASSENGER	0	0	0	0	0	0	0	0	0	0
11	SBC	TANKER	0	0	0	0	0	0	0	0	0	0
11	SDC	FREIGHTER	0	0	0	0	0	0	0	0	0	0
11	SDC	PASSENGER	0	0	0	0	0	0	0	0	0	0
11	SDC	TANKER	0	0	0	0	0	0	0	0	0	0
11	SFC	FREIGHTER	12	4	0	2	0	1	1	1	0	0
11	SFC	PASSENGER	0	0	0	0	0	0	0	0	0	0
11	SFC	TANKER	0	0	0	0	0	0	0	0	0	0
13	GRA	FREIGHTER	0	0	0	0	0	0	0	0	0	0
13	GRA	PASSENGER	0	0	0	0	0	0	0	0	0	0
13	GRA	TANKER	0	0	0	0	0	0	0	0	0	0
13	POR	FREIGHTER	82	61	0	20	0	15	5	5	0	20
13	POR	PASSENGER	0	0	0	0	0	0	0	0	0	0
13	POR	TANKER	0	0	0	0	0	0	0	0	0	0
13	SEA	FREIGHTER	10	6	0	1	0	0	1	0	0	0
13	SEA	PASSENGER	0	0	0	0	0	0	0	0	0	0
13	SEA	TANKER	0	0	0	0	0	0	0	0	0	0

Table A.4.5 Risk-Based Rankings - Foreign Flag, MSO, Relative Frequency, Pollution

Bin			Level III Intervention Strategy Importance									
District	MSO	Service	Cargo/Poll.	Steering	Documents	Drills	Auxiliary Sys.	Power Plant	Fire Prevention	Hull	Liferaing	Other
14	ASO	FREIGHTER	0	0	0	0	0	0	0	0	0	0
14	ASO	PASSENGER	0	0	0	0	0	0	0	0	0	0
14	ASO	TANKER	0	0	0	0	0	0	0	0	0	0
14	GUA	FREIGHTER	0	0	0	0	0	0	0	0	0	0
14	GUA	PASSENGER	0	0	0	0	0	0	0	0	0	0
14	GUA	TANKER	0	0	0	0	0	0	0	0	0	0
14	HON	FREIGHTER	1	0	0	0	0	0	0	0	0	0
Bad Data 14	HON	PASSENGER	0	0	0	0	0	0	0	0	0	0
14	HON	TANKER	0	0	0	0	0	0	0	0	0	0
17	ANC	FREIGHTER	0	0	0	0	0	0	0	0	0	0
17	ANC	PASSENGER	0	0	0	0	0	0	0	0	0	0
17	ANC	TANKER	0	0	0	0	0	0	0	0	0	0
17	DHA	FREIGHTER	0	0	0	0	0	0	0	0	0	0
17	DHA	PASSENGER	0	0	0	0	0	0	0	0	0	0
17	DHA	TANKER	0	0	0	0	0	0	0	0	0	0
17	JUN	FREIGHTER	0	0	0	0	0	0	0	0	0	0
17	JUN	PASSENGER	0	0	0	0	0	0	0	0	0	0
17	JUN	TANKER	0	0	0	0	0	0	0	0	0	0

Table A.4.5 Risk-Based Rankings - Foreign Flag, MSO, Relative Frequency, Pollution												
Bin			Level III Intervention Strategy Importance									
District	MSO	Service	Cargo/Poll.	Steering	Documents	Drills	Auxiliary Sys.	Power Plant	Fire Prevention	Hull	Lifesaving	Other
17	KEN	FREIGHTER	0	0	0	0	0	0	0	0	0	0
17	KEN	PASSENGER	0	0	0	0	0	0	0	0	0	0
17	KEN	TANKER	0	0	0	0	0	0	0	0	0	0
17	KET	FREIGHTER	0	0	0	0	0	0	0	0	0	0
17	KET	PASSENGER	0	0	0	0	0	0	0	0	0	0
17	KET	TANKER	0	0	0	0	0	0	0	0	0	0
17	KOD	FREIGHTER	0	0	0	0	0	0	0	0	0	0
17	KOD	PASSENGER	0	0	0	0	0	0	0	0	0	0
17	KOD	TANKER	0	0	0	0	0	0	0	0	0	0
17	SIT	FREIGHTER	0	0	0	0	0	0	0	0	0	0
17	SIT	PASSENGER	0	0	0	0	0	0	0	0	0	0
17	SIT	TANKER	0	0	0	0	0	0	0	0	0	0
17	VAL	FREIGHTER	0	0	0	0	0	0	0	0	0	0
17	VAL	PASSENGER	0	0	0	0	0	0	0	0	0	0
17	VAL	TANKER	0	0	0	0	0	0	0	0	0	0

Table A.4.6 Risk-Based Rankings - Foreign Flag, MSO, Casualty Frequency, Deaths

Bin		Level III Intervention Strategy Importance										
District	MSO	Service	Cargo/Pol.	Steering	Documents	Drills	Auxiliary Sys.	Power Plant	Fire Prevention	Hull	Lifesaving	Other
1	BOS	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1	BOS	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1	BOS	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1	LIS	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1	LIS	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1	LIS	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1	NYC	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1	NYC	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1	NYC	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1	POM	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1	POM	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1	POM	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1	PRO	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1	PRO	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1	PRO	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	ALL MSOs	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	ALL MSOs	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Table A.4.6 Risk-Based Rankings - Foreign Flag, MSO, Casualty Frequency, Deaths

Bin			Level III Intervention Strategy Importance									
District	MSO	Service	Cargo/Poll.	Steering	Documents	Drills	Auxiliary Sys.	Power Plant	Fire Prevention	Hull	Lifesaving	Other
2	ALL MSOs	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5	BAL	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5	BAL	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5	BAL	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5	HMR	FREIGHTER	0.0160	0.0160	0.0000	0.0027	0.0000	0.0013	0.0000	0.0013	0.0000	0.0013
5	HMR	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5	HMR	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5	PHI	FREIGHTER	0.0142	0.0115	0.0000	0.0009	0.0000	0.0000	0.0000	0.0009	0.0000	0.0000
5	PHI	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5	PHI	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5	WNC	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5	WNC	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5	WNC	TANKER	0.1429	0.3810	0.0000	0.0476	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	CHA	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	CHA	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	CHA	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	JAC	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	JAC	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	JAC	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Table A.4.6 Risk-Based Rankings - Foreign Flag, MSO, Casualty Frequency, Deaths

Bin			Level III Intervention Strategy Importance									
District	MSO	Service	Cargo/Poll.	Steering	Documents	Drills	Auxiliary Sys.	Power Plant	Fire Prevention	Hull	Lifesaving	Other
7	MIA	FREIGHTER	0.1116	0.0435	0.0000	0.0027	0.0000	0.0000	0.0000	0.0136	0.0000	0.0027
7	MIA	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	MIA	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	PTC	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	PTC	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	PTC	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	SAV	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	SAV	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	SAV	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	SJP	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	SJP	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	SJP	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	STC	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	STC	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	STC	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	STT	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	STT	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	STT	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	TAM	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000



Table A.4.6 Risk-Based Rankings - Foreign Flag, MSO, Casualty Frequency, Deaths												
Bin			Level III Intervention Strategy Importance									
District	MSO	Service	Cargo/Pol.	Steering	Documents	Drills	Auxiliary Sys.	Power Plant	Fire Prevention	Hull	Lifeaving	Other
7	TAM	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	TAM	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	BAT	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	BAT	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	BAT	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	BRN	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	BRN	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	BRN	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	COR	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	COR	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	COR	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	GAL	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	GAL	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	GAL	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	HOU	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	HOU	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	HOU	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	LKC	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	LKC	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Table A.4.6 Risk-Based Rankings - Foreign Flag, MSO, Casualty Frequency, Deaths

Bin			Level III Intervention Strategy Importance									
District	MSO	Service	Cargo/Pol.	Steering	Documents	Drills	Auxiliary Sys.	Power Plant	Fire Prevention	Hull	Liferaing	Other
8	LKC	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	MOB	FREIGHTER	0.0252	0.0194	0.0000	0.0058	0.0000	0.0019	0.0000	0.0039	0.0000	0.0019
8	MOB	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	MOB	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	MOR	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	MOR	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	MOR	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	NEW	FREIGHTER	0.0046	0.0079	0.0000	0.0021	0.0000	0.0025	0.0000	0.0000	0.0000	0.0012
8	NEW	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	NEW	TANKER	0.0419	0.0419	0.0000	0.0093	0.0000	0.0000	0.0140	0.0047	0.0000	0.0093
8	PAT	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	PAT	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	PAT	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	PCD	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	PCD	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	PCD	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	PLA	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	PLA	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	PLA	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Table A.4.6 Risk-Based Rankings - Foreign Flag, MSO, Casualty Frequency, Deaths

Bin			Level III Intervention Strategy Importance									
District	MSO	Service	Cargo/Poll.	Steering	Documents	Drills	Auxiliary Sys.	Power Plant	Fire Prevention	Hull	Lifesaving	Other
9	BUF	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
9	BUF	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
9	BUF	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
9	CHI	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
9	CHI	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
9	CHI	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
9	CLE	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
9	CLE	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
9	CLE	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
9	DET	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
9	DET	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
9	DET	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
9	DUL	FREIGHTER	0.0388	0.0543	0.0000	0.0233	0.0000	0.0000	0.0078	0.0078	0.0000	0.0000
9	DUL	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
9	DUL	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
9	MAS	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
9	MAS	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
9	MAS	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
9	MIL	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Table A.4.6 Risk-Based Rankings - Foreign Flag, MSO, Casualty Frequency, Deaths

Table A.4.6 Risk-Based Rankings - Foreign Flag, MSO, Casualty Frequency, Deaths												
Bin			Level III Intervention Strategy Importance									
District	MSO	Service	Cargo/Poll.	Steering	Documents	Drills	Auxiliary Sys.	Power Plant	Fire Prevention	Hull	Lifesaving	Other
9	MIL	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
9	MIL	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
9	SIM	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
9	SIM	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
9	SIM	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
9	SSM	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
9	SSM	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
9	SSM	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
9	STB	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
9	STB	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
9	STB	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
9	TOL	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
9	TOL	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
9	TOL	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
11	CON	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
11	CON	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
11	CON	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
11	LOS	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
11	LOS	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Table A.4.6 Risk-Based Rankings - Foreign Flag, MSO, Casualty Frequency, Deaths

Bin			Level III Intervention Strategy Importance									
District	MSO	Service	Cargo/Poll.	Steering	Documents	Drills	Auxiliary Sys.	Power Plant	Fire Prevention	Hull	Lifesaving	Other
11	LOS	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
11	SBC	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
11	SBC	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
11	SBC	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
11	SDC	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
11	SDC	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
11	SDC	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
11	SFC	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
11	SFC	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
11	SFC	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
13	GRA	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
13	GRA	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
13	GRA	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
13	POR	FREIGHTER	0.0232	0.0174	0.0000	0.0058	0.0000	0.0044	0.0015	0.0015	0.0000	0.0058
13	POR	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
13	POR	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
13	SEA	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
13	SEA	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
13	SEA	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Table A.4.6 Risk-Based Rankings - Foreign Flag, MSO, Casualty Frequency, Deaths

Bin			Level III Intervention Strategy Importance									
District	MSO	Service	Cargo/Poll.	Steering	Documents	Drills	Auxiliary Sys.	Power Plant	Fire Prevention	Hull	Lifesaving	Other
14	ASO	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
14	ASO	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
14	ASO	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
14	GUA	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
14	GUA	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
14	GUA	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
14	HON	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
14	HON	PASSENGER	0.2105	0.1579	0.0000	1.1053	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
14	HON	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
14	ANC	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
14	ANC	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
17	ANC	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
17	DHA	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
17	DHA	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
17	DHA	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
17	JUN	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
17	JUN	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
17	JUN	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
17	KEN	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Table A.4.6 Risk-Based Rankings - Foreign Flag, MSO, Casualty Frequency, Deaths												
Bin			Level III Intervention Strategy Importance									
District	MSO	Service	Cargo/Poll.	Steering	Documents	Drills	Auxiliary Sys.	Power Plant	Fire Prevention	Hull	Lifesaving	Other
17	KEN	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
17	KEN	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
17	KET	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
17	KET	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
17	KET	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
17	KOD	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
17	KOD	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
17	KOD	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
17	SIT	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
17	SIT	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
17	SIT	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
17	VAL	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
17	VAL	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
17	VAL	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Table A.4.7 Risk-Based Rankings - Foreign Flag, MSO, Casualty Frequency, Injuries

Table A.4.7 Risk-Based Rankings - Foreign Flag, MSO, Casualty Frequency, Injuries												
Bin			Level III Intervention Strategy Importance									
District	MSO	Service	Cargo/Poll.	Steering	Documents	Drills	Auxiliary Sys.	Power Plant	Fire Prevention	Hull	Lifesaving	Other
1	BOS	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1	BOS	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1	BOS	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1	LIS	FREIGHTER	0.0188	0.0250	0.0000	0.0063	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1	LIS	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1	LIS	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1	NYC	FREIGHTER	0.0559	0.0426	0.0000	0.0053	0.0000	0.0053	0.0080	0.0027	0.0000	0.0027
1	NYC	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1	NYC	TANKER	0.0735	0.0331	0.0000	0.0037	0.0000	0.0110	0.0000	0.0000	0.0000	0.0000
1	POM	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1	POM	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1	POM	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1	PRO	FREIGHTER	0.0313	0.0469	0.0000	0.0078	0.0000	0.0000	0.0000	0.0078	0.0000	0.0000
1	PRO	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1	PRO	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	ALL MSOs	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	ALL MSOs	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000



Table A.4.7 Risk-Based Rankings - Foreign Flag, MSO, Casualty Frequency, Injuries

Bin		Level III Intervention Strategy Importance										
District	MSO	Service	Cargo/Pol.	Steering	Documents	Drills	Auxiliary Sys.	Power Plant	Fire Prevention	Hull	Lifesaving	Other
2	ALL MSOs	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5	BAL	FREIGHTER	0.0304	0.0455	0.0000	0.0076	0.0000	0.0038	0.0000	0.0038	0.0000	0.0000
5	BAL	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5	BAL	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5	HMR	FREIGHTER	0.0160	0.0160	0.0000	0.0027	0.0000	0.0013	0.0000	0.0013	0.0000	0.0013
5	HMR	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5	HMR	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5	PHI	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5	PHI	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5	PHI	TANKER	0.1294	0.0353	0.0000	0.0235	0.0000	0.0000	0.0000	0.0000	0.0000	0.0235
5	WNC	FREIGHTER	0.0211	0.0158	0.0000	0.0053	0.0000	0.0053	0.0000	0.0000	0.0000	0.0053
5	WNC	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5	WNC	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	CHA	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	CHA	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	CHA	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	JAC	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	JAC	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	JAC	TANKER	0.2667	0.0667	0.0000	0.0667	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Table A.4.7 Risk-Based Rankings - Foreign Flag, MSO, Casualty Frequency, Injuries

Bin			Level III Intervention Strategy Importance									
District	MSO	Service	Cargo/Pol.	Steering	Documents	Drills	Auxiliary Sys.	Power Plant	Fire Prevention	Hull	Lifesaving	Other
7	MIA	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	MIA	PASSENGER	1.6000	0.0000	0.0000	0.8000	0.0000	0.0000	0.2667	0.0000	0.0000	0.0000
7	MIA	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	PTC	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	PTC	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	PTC	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	SAV	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	SAV	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	SAV	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	SJP	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	SJP	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	SJP	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	STC	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	STC	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	STC	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	STT	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	STT	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	STT	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	TAM	FREIGHTER	0.0248	0.0158	0.0000	0.0023	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Table A.4.7 Risk-Based Rankings - Foreign Flag, MSO, Casualty Frequency, Injuries

Bin		Level III Intervention Strategy Importance										
District	MSO	Service	Cargo/Poll.	Steering	Documents	Drills	Auxiliary Sys.	Power Plant	Fire Prevention	Hull	Lifesaving	Other
7	TAM	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	TAM	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	BAT	FREIGHTER	0.0209	0.0293	0.0000	0.0042	0.0000	0.0084	0.0000	0.0000	0.0000	0.0042
8	BAT	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	BAT	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	BRN	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	BRN	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	BRN	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	COR	FREIGHTER	0.0282	0.0256	0.0000	0.0026	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	COR	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	COR	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	GAL	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	GAL	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	GAL	TANKER	0.0787	0.0945	0.0000	0.0157	0.0000	0.0079	0.0157	0.0079	0.0000	0.0000
8	HOU	FREIGHTER	0.0449	0.0543	0.0000	0.0056	0.0000	0.0037	0.0000	0.0037	0.0000	0.0019
8	HOU	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	HOU	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	LKC	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	LKC	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Table A.4.7 Risk-Based Rankings - Foreign Flag, MSO, Casualty Frequency, Injuries

Bin			Level III Intervention Strategy Importance									
District	MSO	Service	Cargo/Poll.	Steering	Documents	Drills	Auxiliary Sys.	Power Plant	Fire Prevention	Hull	Lifesaving	Other
8	LKC	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	MOB	FREIGHTER	0.0252	0.0194	0.0000	0.0058	0.0000	0.0019	0.0000	0.0039	0.0000	0.0019
8	MOB	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	MOB	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	MOR	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	MOR	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	MOR	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	NEW	FREIGHTER	0.0091	0.0158	0.0000	0.0041	0.0000	0.0050	0.0000	0.0000	0.0000	0.0025
8	NEW	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	NEW	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	PAT	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	PAT	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	PAT	TANKER	0.3784	0.4324	0.0000	0.1622	0.0000	0.0541	0.0000	0.1081	0.0000	0.0541
8	PCD	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	PCD	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	PCD	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	PLA	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	PLA	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	PLA	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Table A.4.7 Risk-Based Rankings - Foreign Flag, MSO, Casualty Frequency, Injuries

Bin		Level III Intervention Strategy Importance										
District	MSO	Service	Cargo/Poll.	Steering	Documents	Drills	Auxiliary Sys.	Power Plant	Fire Prevention	Hull	Lifesaving	Other
9	BUF	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
9	BUF	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
9	BUF	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
9	CHI	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
9	CHI	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
9	CHI	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
9	CLE	FREIGHTER	0.0000	0.0172	0.0000	0.0172	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
9	CLE	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
9	CLE	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
9	DET	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
9	DET	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
9	DET	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
9	DUL	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
9	DUL	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
9	DUL	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
9	MAS	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
9	MAS	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
9	MAS	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
9	MIL	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Table A.4.7 Risk-Based Rankings - Foreign Flag, MSO, Casualty Frequency, Injuries

Table A.4.7 Risk-Based Rankings - Foreign Flag, MSO, Casualty Frequency, Injuries												
Bin			Level III Intervention Strategy Importance									
District	MSO	Service	Cargo/Poll.	Steering	Documents	Drills	Auxiliary Sys.	Power Plant	Fire Prevention	Hull	Lifesaving	Other
9	MIL	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
9	MIL	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
9	SIM	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
9	SIM	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
9	SIM	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
9	SSM	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
9	SSM	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
9	SSM	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
9	STB	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
9	STB	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
9	STB	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
9	TOL	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
9	TOL	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
9	TOL	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
11	CON	FREIGHTER	0.0220	0.0440	0.0000	0.0110	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
11	CON	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
11	CON	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
11	LOS	FREIGHTER	0.0222	0.0259	0.0000	0.0074	0.0000	0.0037	0.0000	0.0018	0.0000	0.0037
11	LOS	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Table A.4.7 Risk-Based Rankings - Foreign Flag, MSO, Casualty Frequency, Injuries

Table A.4.7 Risk-Based Rankings - Foreign Flag, MSO, Casualty Frequency, Injuries												
Bin			Level III Intervention Strategy Importance									
District	MSO	Service	Cargo/Poll.	Steering	Documents	Drills	Auxiliary Sys.	Power Plant	Fire Prevention	Hull	Lifesaving	Other
11	LOS	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
11	SBC	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
11	SBC	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
11	SBC	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
11	SDC	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
11	SDC	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
11	SDC	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
11	SFC	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
11	SFC	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
11	SFC	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
13	GRA	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
13	GRA	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
13	GRA	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
13	POR	FREIGHTER	0.0116	0.0087	0.0000	0.0029	0.0000	0.0022	0.0007	0.0007	0.0000	0.0029
13	POR	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
13	POR	TANKER	0.0426	0.0000	0.0000	0.0213	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
13	SEA	FREIGHTER	0.0123	0.0074	0.0000	0.0012	0.0000	0.0000	0.0012	0.0000	0.0000	0.0000
13	SEA	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
13	SEA	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Table A.4.7 Risk-Based Rankings - Foreign Flag, MSO, Casualty Frequency, Injuries

Bin			Level III Intervention Strategy Importance									
District	MSO	Service	Cargo/Poll.	Steering	Documents	Drills	Auxiliary Sys.	Power Plant	Fire Prevention	Hull	Lifesaving	Other
14	ASO	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
14	ASO	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
14	ASO	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
14	GUA	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
14	GUA	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
14	GUA	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
14	HON	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
14	HON	PASSENGER	5.0526	3.7895	0.0000	26.5263	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
14	HON	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
14	ANC	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
14	ANC	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
17	ANC	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
17	DHA	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
17	DHA	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
17	DHA	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
17	JUN	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
17	JUN	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
17	JUN	TANKER	0.0000	0.0000	0.0000	0.3333	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
17	KEN	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000



Table A.4.7 Risk-Based Rankings - Foreign Flag, MSO, Casualty Frequency, Injuries

Table A.4.7 Risk-Based Rankings - Foreign Flag, MSO, Casualty Frequency, Injuries												
Bin			Level III Intervention Strategy Importance									
District	MSO	Service	Cargo/Pol.	Steering	Documents	Drills	Auxiliary Sys.	Power Plant	Fire Prevention	Hull	Lifesaving	Other
17	KEN	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
17	KEN	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
17	KET	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
17	KET	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
17	KET	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
17	KOD	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
17	KOD	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
17	KOD	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
17	SIT	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
17	SIT	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
17	SIT	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
17	VAL	FREIGHTER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
17	VAL	PASSENGER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
17	VAL	TANKER	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Table A.4.8 Risk-Based Rankings - Foreign Flag, MSO, Casualty Frequency, Property Damage

Table A.4.8 Risk-Based Rankings - Foreign Flag, MSO, Casualty Frequency, Property Damage												
Bin			Level III Intervention Strategy Importance									
District	MSO	Service	Cargo/Pol.	Steering	Documents	Drills	Auxiliary Sys.	Power Plant	Fire Prevention	Hull	Lifesaving	Other
1	BOS	FREIGHTER	\$15,216	\$60,864	\$0	\$0	\$0	\$0	\$0	\$15,216	\$0	\$7,608
1	BOS	PASSENGER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
1	BOS	TANKER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
1	LIS	FREIGHTER	\$2	\$3	\$0	\$1	\$0	\$0	\$0	\$0	\$0	\$0
1	LIS	PASSENGER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
1	LIS	TANKER	\$3,529	\$7,059	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
1	NYC	FREIGHTER	\$17,357	\$13,225	\$0	\$1,653	\$0	\$1,653	\$2,480	\$827	\$0	\$827
1	NYC	PASSENGER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
1	NYC	TANKER	\$7,353	\$3,309	\$0	\$368	\$0	\$1,103	\$0	\$0	\$0	\$0
1	POM	FREIGHTER	\$2,000	\$6,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
1	POM	PASSENGER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
1	POM	TANKER	\$6,415	\$1,283	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
1	PRO	FREIGHTER	\$953	\$1,430	\$0	\$238	\$0	\$0	\$0	\$238	\$0	\$0
1	PRO	PASSENGER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
1	PRO	TANKER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2	ALL MSOs	FREIGHTER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2	ALL MSOs	PASSENGER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0

Table A.4.8 Risk-Based Rankings - Foreign Flag, MSO, Casualty Frequency, Property Damage

Bin			Level III Intervention Strategy Importance									
District	MSO	Service	Cargo/Polli.	Steering	Documents	Drills	Auxiliary Sys.	Power Plant	Fire Prevention	Hull	Lifesaving	Other
2	ALL MSOs	TANKER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
5	BAL	FREIGHTER	\$8,971	\$13,456	\$0	\$2,243	\$0	\$1,121	\$0	\$1,121	\$0	\$0
5	BAL	PASSENGER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
5	BAL	TANKER	\$4	\$3	\$0	\$1	\$0	\$0	\$0	\$0	\$0	\$0
5	HMR	FREIGHTER	\$641	\$641	\$0	\$107	\$0	\$53	\$0	\$53	\$0	\$53
5	HMR	PASSENGER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
5	HMR	TANKER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
5	PHI	FREIGHTER	\$21,899	\$17,793	\$0	\$1,369	\$0	\$0	\$0	\$1,369	\$0	\$0
5	PHI	PASSENGER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
5	PHI	TANKER	\$7,447	\$2,031	\$0	\$1,354	\$0	\$0	\$0	\$0	\$0	\$1,354
5	WNC	FREIGHTER	\$1,263	\$947	\$0	\$316	\$0	\$316	\$0	\$0	\$0	\$316
5	WNC	PASSENGER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
5	WNC	TANKER	\$21,429	\$57,143	\$0	\$7,143	\$0	\$0	\$0	\$0	\$0	\$0
7	CHA	FREIGHTER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
7	CHA	PASSENGER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
7	CHA	TANKER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
7	JAC	FREIGHTER	\$3,836	\$639	\$0	\$0	\$0	\$0	\$0	\$639	\$0	\$639
7	JAC	PASSENGER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
7	JAC	TANKER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0

Table A.4.8 Risk-Based Rankings - Foreign Flag, MSO, Casualty Frequency, Property Damage

Bin			Level III Intervention Strategy Importance									
District	MSO	Service	Cargo/Poll.	Steering	Documents	Drills	Auxiliary Sys.	Power Plant	Fire Prevention	Hull	Lifeaving	Other
7	MIA	FREIGHTER	\$59,771	\$23,325	\$0	\$1,458	\$0	\$0	\$0	\$7,289	\$0	\$1,458
7	MIA	PASSENGER	\$4,000	\$0	\$0	\$2,000	\$0	\$0	\$667	\$0	\$0	\$0
7	MIA	TANKER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
7	PTC	FREIGHTER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
7	PTC	PASSENGER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
7	PTC	TANKER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
7	SAV	FREIGHTER	\$697	\$369	\$0	\$0	\$0	\$123	\$41	\$0	\$0	\$41
7	SAV	PASSENGER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
7	SAV	TANKER	\$0	\$11,538	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
7	SJP	FREIGHTER	\$54,148	\$37,904	\$0	\$0	\$0	\$0	\$5,415	\$0	\$0	\$0
7	SJP	PASSENGER	\$250	\$500	\$0	\$0	\$0	\$250	\$250	\$0	\$0	\$0
7	SJP	TANKER	\$707	\$326	\$0	\$0	\$0	\$0	\$0	\$54	\$0	\$0
7	STC	FREIGHTER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
7	STC	PASSENGER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
7	STC	TANKER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
7	STT	FREIGHTER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
7	STT	PASSENGER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
7	STT	TANKER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
7	TAM	FREIGHTER	\$669	\$426	\$0	\$61	\$0	\$0	\$0	\$0	\$0	\$0

Table A.4.8 Risk-Based Rankings - Foreign Flag, MSO, Casualty Frequency, Property Damage

Table A.4.8 Risk-Based Rankings - Foreign Flag, MSO, Casualty Frequency, Property Damage												
Bin			Level III Intervention Strategy Importance									
District	MSO	Service	Cargo/Poll.	Steering	Documents	Drills	Auxiliary Sys.	Power Plant	Fire Prevention	Hull	Lifesaving	Other
7	TAM	PASSENGER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
7	TAM	TANKER	\$82	\$55	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
8	BAT	FREIGHTER	\$732	\$1,025	\$0	\$146	\$0	\$293	\$0	\$0	\$0	\$146
8	BAT	PASSENGER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
8	BAT	TANKER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
8	BRN	FREIGHTER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
8	BRN	PASSENGER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
8	BRN	TANKER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
8	COR	FREIGHTER	\$14,526	\$13,205	\$0	\$1,321	\$0	\$0	\$0	\$0	\$0	\$0
8	COR	PASSENGER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
8	COR	TANKER	\$10,205	\$9,071	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$1,134
8	GAL	FREIGHTER	\$4,054	\$11,350	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
8	GAL	PASSENGER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
8	GAL	TANKER	\$6,726	\$8,072	\$0	\$1,345	\$0	\$673	\$1,345	\$673	\$0	\$0
8	HOU	FREIGHTER	\$39,792	\$48,082	\$0	\$4,974	\$0	\$3,316	\$0	\$3,316	\$0	\$1,658
8	HOU	PASSENGER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
8	HOU	TANKER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
8	LKC	FREIGHTER	\$3,417	\$11,958	\$0	\$0	\$0	\$1,708	\$0	\$0	\$0	\$1,708
8	LKC	PASSENGER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0

Table A.4.8 Risk-Based Rankings - Foreign Flag, MSO, Casualty Frequency, Property Damage

Bin			Level III Intervention Strategy Importance									
District	MSO	Service	Cargo/Pol.	Steering	Documents	Drills	Auxiliary Sys.	Power Plant	Fire Prevention	Hull	Lifesaving	Other
8	LKC	TANKER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
8	MOB	FREIGHTER	\$271	\$209	\$0	\$63	\$0	\$21	\$0	\$42	\$0	\$21
8	MOB	PASSENGER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
8	MOB	TANKER	\$13,143	\$13,143	\$0	\$6,571	\$0	\$0	\$0	\$0	\$0	\$0
8	MOR	FREIGHTER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
8	MOR	PASSENGER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
8	MOR	TANKER	\$96	\$48	\$0	\$0	\$0	\$0	\$48	\$0	\$0	\$0
8	NEW	FREIGHTER	\$12,681	\$21,904	\$0	\$5,764	\$0	\$6,917	\$0	\$0	\$0	\$3,458
8	NEW	PASSENGER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
8	NEW	TANKER	\$22,208	\$22,208	\$0	\$4,935	\$0	\$0	\$7,403	\$2,468	\$0	\$4,935
8	PAT	FREIGHTER	\$1,937	\$430	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$215
8	PAT	PASSENGER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
8	PAT	TANKER	\$12,320	\$14,080	\$0	\$5,280	\$0	\$1,760	\$0	\$3,520	\$0	\$1,760
8	PCD	FREIGHTER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
8	PCD	PASSENGER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
8	PCD	TANKER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
8	PLA	FREIGHTER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
8	PLA	PASSENGER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
8	PLA	TANKER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0

Table A.4.8 Risk-Based Rankings - Foreign Flag, MSO, Casualty Frequency, Property Damage												
Bin			Level III Intervention Strategy Importance									
District	MSO	Service	Cargo/Poll.	Steering	Documents	Drills	Auxiliary Sys.	Power Plant	Fire Prevention	Hull	Lifesaving	Other
9	BUF	FREIGHTER	\$0	\$1,000	\$0	\$0	\$0	\$0	\$0	\$1,000	\$0	\$0
9	BUF	PASSENGER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
9	BUF	TANKER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
9	CHI	FREIGHTER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
9	CHI	PASSENGER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
9	CHI	TANKER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
9	CLE	FREIGHTER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
9	CLE	PASSENGER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
9	CLE	TANKER	\$0	\$50,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
9	DET	FREIGHTER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
9	DET	PASSENGER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
9	DET	TANKER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
9	DUL	FREIGHTER	\$21,477	\$30,067	\$0	\$12,886	\$0	\$0	\$4,295	\$4,295	\$0	\$0
9	DUL	PASSENGER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
9	DUL	TANKER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
9	MAS	FREIGHTER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
9	MAS	PASSENGER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
9	MAS	TANKER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
9	MIL	FREIGHTER	\$0	\$5,363	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0

Table A.4.8 Risk-Based Rankings - Foreign Flag, MSO, Casualty Frequency, Property Damage												
Bin			Level III Intervention Strategy Importance									
District	MSO	Service	Cargo/Poll.	Steering	Documents	Drills	Auxiliary Sys.	Power Plant	Fire Prevention	Hull	Lifesaving	Other
9	MIL	PASSENGER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
9	MIL	TANKER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
9	SIM	FREIGHTER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
9	SIM	PASSENGER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
9	SIM	TANKER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
9	SSM	FREIGHTER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
9	SSM	PASSENGER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
9	SSM	TANKER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
9	STB	FREIGHTER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
9	STB	PASSENGER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
9	STB	TANKER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
9	TOL	FREIGHTER	\$17,389	\$86,943	\$0	\$0	\$0	\$0	\$8,694	\$8,694	\$0	\$0
9	TOL	PASSENGER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
9	TOL	TANKER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
11	CON	FREIGHTER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
11	CON	PASSENGER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
11	CON	TANKER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
11	LOS	FREIGHTER	\$53,102	\$61,953	\$0	\$17,701	\$0	\$8,850	\$0	\$4,425	\$0	\$8,850
11	LOS	PASSENGER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0



Table A.4.8 Risk-Based Rankings - Foreign Flag, MSO, Casualty Frequency, Property Damage												
Bin			Level III Intervention Strategy Importance									
District	MSO	Service	Cargo/Pol.	Steering	Documents	Drills	Auxiliary Sys.	Power Plant	Fire Prevention	Hull	Lifesaving	Other
11	LOS	TANKER	\$699	\$1,399	\$0	\$0	\$0	\$350	\$0	\$0	\$0	\$0
11	SBC	FREIGHTER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
11	SBC	PASSENGER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
11	SBC	TANKER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
11	SDC	FREIGHTER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
11	SDC	PASSENGER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
11	SDC	TANKER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
11	SFC	FREIGHTER	\$8,217	\$2,935	\$0	\$1,174	\$0	\$587	\$587	\$587	\$0	\$0
11	SFC	PASSENGER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
11	SFC	TANKER	\$20,000	\$5,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
13	GRA	FREIGHTER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
13	GRA	PASSENGER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
13	GRA	TANKER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
13	POR	FREIGHTER	\$3,174	\$2,380	\$0	\$793	\$0	\$595	\$198	\$198	\$0	\$793
13	POR	PASSENGER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
13	POR	TANKER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
13	SEA	FREIGHTER	\$998	\$599	\$0	\$100	\$0	\$0	\$100	\$0	\$0	\$0
13	SEA	PASSENGER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
13	SEA	TANKER	\$721	\$721	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0

Table A.4.8 Risk-Based Rankings - Foreign Flag, MSO, Casualty Frequency, Property Damage												
Bin			Level III Intervention Strategy Importance									
District	MSO	Service	Cargo/Pol.	Steering	Documents	Drills	Auxiliary Sys.	Power Plant	Fire Prevention	Hull	Lifesaving	Other
14	ASO	FREIGHTER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
14	ASO	PASSENGER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
14	ASO	TANKER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
14	GUA	FREIGHTER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
14	GUA	PASSENGER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
14	GUA	TANKER	\$0	\$0	\$0	\$0	\$0	\$0	\$448	\$0	\$0	\$0
14	HON	FREIGHTER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Bad Data	HON	PASSENGER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
14	HON	TANKER	\$5,778	\$1,444	\$0	\$0	\$0	\$0	\$2,889	\$0	\$0	\$1,444
17	ANC	FREIGHTER	\$8,333	\$0	\$0	\$0	\$0	\$0	\$0	\$8,333	\$0	\$0
17	ANC	PASSENGER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
17	ANC	TANKER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
17	DHA	FREIGHTER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
17	DHA	PASSENGER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
17	DHA	TANKER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
17	JUN	FREIGHTER	\$140	\$350	\$0	\$0	\$0	\$0	\$0	\$70	\$0	\$0
17	JUN	PASSENGER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
17	JUN	TANKER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
17	KEN	FREIGHTER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0

Table A.4.8 Risk-Based Rankings - Foreign Flag, MSO, Casualty Frequency, Property Damage												
Bin			Level III Intervention Strategy Importance									
District	MSO	Service	Cargo/Poll.	Steering	Documents	Drills	Auxiliary Sys.	Power Plant	Fire Prevention	Hull	Lifesaving	Other
17	KEN	PASSENGER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
17	KEN	TANKER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
17	KET	FREIGHTER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
17	KET	PASSENGER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
17	KET	TANKER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
17	KOD	FREIGHTER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
17	KOD	PASSENGER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
17	KOD	TANKER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
17	SIT	FREIGHTER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
17	SIT	PASSENGER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
17	SIT	TANKER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
17	VAL	FREIGHTER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
17	VAL	PASSENGER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
17	VAL	TANKER	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0

Table A.4.9 Risk-Based Rankings - Foreign Flag, MSO, Casualty Frequency, Pollution

Bin			Level III Intervention Strategy Importance									
District	MSO	Service	Cargo/Pol	Steering	Documents	Drills	Auxiliary Sys.	Power Plant	Fire Prevention	Hull	Lifesaving	Other
1	BOS	FREIGHTER	0	0	0	0	0	0	0	0	0	0
1	BOS	PASSENGER	0	0	0	0	0	0	0	0	0	0
1	BOS	TANKER	0	0	0	0	0	0	0	0	0	0
1	LIS	FREIGHTER	0	0	0	0	0	0	0	0	0	0
1	LIS	PASSENGER	0	0	0	0	0	0	0	0	0	0
1	LIS	TANKER	4	7	0	0	0	0	0	0	0	0
1	NYC	FREIGHTER	21	16	0	2	0	2	3	1	0	1
1	NYC	PASSENGER	0	0	0	0	0	0	0	0	0	0
1	NYC	TANKER	82	37	0	4	0	12	0	0	0	0
1	POM	FREIGHTER	0	0	0	0	0	0	0	0	0	0
1	POM	PASSENGER	0	0	0	0	0	0	0	0	0	0
1	POM	TANKER	9344	1869	0	0	0	0	0	0	0	0
1	PRO	FREIGHTER	3	4	0	1	0	0	0	1	0	0
1	PRO	PASSENGER	0	0	0	0	0	0	0	0	0	0
1	PRO	TANKER	19	6	0	0	0	0	0	0	0	0
2	ALL MSOs	FREIGHTER	0	0	0	0	0	0	0	0	0	0
2	ALL MSOs	PASSENGER	0	0	0	0	0	0	0	0	0	0

Table A.4.9 Risk-Based Rankings - Foreign Flag, MSO, Casualty Frequency, Pollution												
Bin				Level III Intervention Strategy Importance								
District	MSO	Service	Cargo/Poll	Steering	Documents	Drills	Auxiliary Sys.	Power Plant	Fire Prevention	Hull	Lifesaving	Other
2	ALL MSOs	TANKER	0	0	0	0	0	0	0	0	0	0
5	BAL	FREIGHTER	77	115	0	19	0	10	0	10	0	0
5	BAL	PASSENGER	0	0	0	0	0	0	0	0	0	0
5	BAL	TANKER	33	24	0	5	0	0	0	0	0	0
5	HMR	FREIGHTER	15	15	0	2	0	1	0	1	0	1
5	HMR	PASSENGER	0	0	0	0	0	0	0	0	0	0
5	HMR	TANKER	836	418	0	105	0	0	0	0	0	0
5	PHI	FREIGHTER	13	11	0	1	0	0	0	1	0	0
5	PHI	PASSENGER	0	0	0	0	0	0	0	0	0	0
5	PHI	TANKER	46	13	0	8	0	0	0	0	0	8
5	WNC	FREIGHTER	12	9	0	3	0	3	0	0	0	3
5	WNC	PASSENGER	0	0	0	0	0	0	0	0	0	0
5	WNC	TANKER	1	2	0	0	0	0	0	0	0	0
7	CHA	FREIGHTER	78	7	0	0	0	0	0	0	0	0
7	CHA	PASSENGER	0	0	0	0	0	0	0	0	0	0
7	CHA	TANKER	0	0	0	0	0	0	0	0	0	0
7	JAC	FREIGHTER	3	1	0	0	0	0	0	1	0	1
7	JAC	PASSENGER	0	0	0	0	0	0	0	0	0	0
7	JAC	TANKER	184	46	0	46	0	0	0	0	0	0

Table A.4.9 Risk-Based Rankings - Foreign Flag, MSO, Casualty Frequency, Pollution

Table A.4.9 Risk-Based Rankings - Foreign Flag, MSO, Casualty Frequency, Pollution												
Bin			Level III Intervention Strategy Importance									
District	MSO	Service	Cargo/Poll	Steering	Documents	Drills	Auxiliary Sys.	Power Plant	Fire Prevention	Hull	Lifesaving	Other
7	MIA	FREIGHTER	8404	3279	0	205	0	0	0	1025	0	205
7	MIA	PASSENGER	116	0	0	58	0	0	19	0	0	0
7	MIA	TANKER	4	0	0	0	0	0	0	0	0	0
7	PTC	FREIGHTER	0	0	0	0	0	0	0	0	0	0
7	PTC	PASSENGER	0	0	0	0	0	0	0	0	0	0
7	PTC	TANKER	0	0	0	0	0	0	0	0	0	0
7	SAV	FREIGHTER	37	20	0	0	0	7	2	0	0	2
7	SAV	PASSENGER	0	0	0	0	0	0	0	0	0	0
7	SAV	TANKER	0	23	0	0	0	0	0	0	0	0
7	SJP	FREIGHTER	3	2	0	0	0	0	0	0	0	0
7	SJP	PASSENGER	0	0	0	0	0	0	0	0	0	0
7	SJP	TANKER	213	98	0	0	0	0	0	16	0	0
7	STC	FREIGHTER	0	0	0	0	0	0	0	0	0	0
7	STC	PASSENGER	0	0	0	0	0	0	0	0	0	0
7	STC	TANKER	0	0	0	0	0	0	0	0	0	0
7	STT	FREIGHTER	0	0	0	0	0	0	0	0	0	0
7	STT	PASSENGER	0	0	0	0	0	0	0	0	0	0
7	STT	TANKER	0	0	0	0	0	0	0	0	0	0
7	TAM	FREIGHTER	15	9	0	1	0	0	0	0	0	0

Table A.4.9 Risk-Based Rankings - Foreign Flag, MSO, Casualty Frequency, Pollution												
Bin			Level III Intervention Strategy Importance									
District	MSO	Service	Cargo/Poll	Steering	Documents	Drills	Auxiliary Sys.	Power Plant	Fire Prevention	Hull	Lifesaving	Other
7	TAM	PASSENGER	0	0	0	0	0	0	0	0	0	0
7	TAM	TANKER	66	44	0	0	0	0	0	0	0	0
8	BAT	FREIGHTER	44	62	0	9	0	18	0	0	0	9
8	BAT	PASSENGER	0	0	0	0	0	0	0	0	0	0
8	BAT	TANKER	0	0	0	0	0	0	0	0	0	0
8	BRN	FREIGHTER	0	0	0	0	0	0	0	0	0	0
8	BRN	PASSENGER	0	0	0	0	0	0	0	0	0	0
8	BRN	TANKER	0	0	0	0	0	0	0	0	0	0
8	COR	FREIGHTER	36	33	0	3	0	0	0	0	0	0
8	COR	PASSENGER	0	0	0	0	0	0	0	0	0	0
8	COR	TANKER	1057	940	0	0	0	0	0	0	0	117
8	GAL	FREIGHTER	10	29	0	0	0	0	0	0	0	0
8	GAL	PASSENGER	0	0	0	0	0	0	0	0	0	0
8	GAL	TANKER	312	375	0	62	0	31	62	31	0	0
8	HOU	FREIGHTER	5685	6869	0	711	0	474	0	474	0	237
8	HOU	PASSENGER	0	0	0	0	0	0	0	0	0	0
8	HOU	TANKER	1	1	0	0	0	0	0	0	0	0
8	LKC	FREIGHTER	0	1	0	0	0	0	0	0	0	0
8	LKC	PASSENGER	0	0	0	0	0	0	0	0	0	0

Table A.4.9 Risk-Based Rankings - Foreign Flag, MSO, Casualty Frequency, Pollution

Bin			Level III Intervention Strategy Importance									
District	MSO	Service	Cargo/Poll	Steering	Documents	Drills	Auxiliary Sys.	Power Plant	Fire Prevention	Hull	Lifesaving	Other
8	LKC	TANKER	0	0	0	0	0	0	0	0	0	0
8	MOB	FREIGHTER	43	33	0	10	0	3	0	7	0	3
8	MOB	PASSENGER	0	0	0	0	0	0	0	0	0	0
8	MOB	TANKER	120	120	0	60	0	0	0	0	0	0
8	MOR	FREIGHTER	0	0	0	0	0	0	0	0	0	0
8	MOR	PASSENGER	0	0	0	0	0	0	0	0	0	0
8	MOR	TANKER	0	0	0	0	0	0	0	0	0	0
8	NEW	FREIGHTER	3	5	0	1	0	1	0	0	0	1
8	NEW	PASSENGER	0	0	0	0	0	0	0	0	0	0
8	NEW	TANKER	67	67	0	15	0	0	22	7	0	15
8	PAT	FREIGHTER	32	7	0	0	0	0	0	0	0	4
8	PAT	PASSENGER	0	0	0	0	0	0	0	0	0	0
8	PAT	TANKER	569	651	0	244	0	81	0	163	0	81
8	PCD	FREIGHTER	0	0	0	0	0	0	0	0	0	0
8	PCD	PASSENGER	0	0	0	0	0	0	0	0	0	0
8	PCD	TANKER	0	0	0	0	0	0	0	0	0	0
8	PLA	FREIGHTER	0	0	0	0	0	0	0	0	0	0
8	PLA	PASSENGER	0	0	0	0	0	0	0	0	0	0
8	PLA	TANKER	0	0	0	0	0	0	0	0	0	0



Table A.4.9 Risk-Based Rankings - Foreign Flag, MSO, Casualty Frequency, Pollution												
Bin			Level III Intervention Strategy Importance									
District	MSO	Service	Cargo/Poll	Steering	Documents	Drills	Auxiliary Sys.	Power Plant	Fire Prevention	Hull	Lifesaving	Other
9	BUF	FREIGHTER	0	0	0	0	0	0	0	0	0	0
9	BUF	PASSENGER	0	0	0	0	0	0	0	0	0	0
9	BUF	TANKER	0	0	0	0	0	0	0	0	0	0
9	CHI	FREIGHTER	0	0	0	0	0	0	0	0	0	0
9	CHI	PASSENGER	0	0	0	0	0	0	0	0	0	0
9	CHI	TANKER	0	0	0	0	0	0	0	0	0	0
9	CLE	FREIGHTER	0	0	0	0	0	0	0	0	0	0
9	CLE	PASSENGER	0	0	0	0	0	0	0	0	0	0
9	CLE	TANKER	0	0	0	0	0	0	0	0	0	0
9	DET	FREIGHTER	0	0	0	0	0	0	0	0	0	0
9	DET	PASSENGER	0	0	0	0	0	0	0	0	0	0
9	DET	TANKER	0	0	0	0	0	0	0	0	0	0
9	DUL	FREIGHTER	5	7	0	3	0	0	1	1	0	0
9	DUL	PASSENGER	0	0	0	0	0	0	0	0	0	0
9	DUL	TANKER	0	0	0	0	0	0	0	0	0	0
9	MAS	FREIGHTER	0	0	0	0	0	0	0	0	0	0
9	MAS	PASSENGER	0	0	0	0	0	0	0	0	0	0
9	MAS	TANKER	0	0	0	0	0	0	0	0	0	0
9	MIL	FREIGHTER	0	0	0	0	0	0	0	0	0	0

Table A.4.9 Risk-Based Rankings - Foreign Flag, MSO, Casualty Frequency, Pollution												
Bin				Level III Intervention Strategy Importance								
District	MSO	Service	Cargo/Poll	Steering	Documents	Drills	Auxiliary Sys.	Power Plant	Fire Prevention	Hull	Lifesaving	Other
9	MIL	PASSENGER	0	0	0	0	0	0	0	0	0	0
9	MIL	TANKER	0	0	0	0	0	0	0	0	0	0
9	SIM	FREIGHTER	0	0	0	0	0	0	0	0	0	0
9	SIM	PASSENGER	0	0	0	0	0	0	0	0	0	0
9	SIM	TANKER	0	0	0	0	0	0	0	0	0	0
9	SSM	FREIGHTER	0	0	0	0	0	0	0	0	0	0
9	SSM	PASSENGER	0	0	0	0	0	0	0	0	0	0
9	SSM	TANKER	0	0	0	0	0	0	0	0	0	0
9	STB	FREIGHTER	0	0	0	0	0	0	0	0	0	0
9	STB	PASSENGER	0	0	0	0	0	0	0	0	0	0
9	STB	TANKER	0	0	0	0	0	0	0	0	0	0
9	TOL	FREIGHTER	0	2	0	0	0	0	0	0	0	0
9	TOL	PASSENGER	0	0	0	0	0	0	0	0	0	0
9	TOL	TANKER	0	0	0	0	0	0	0	0	0	0
11	CON	FREIGHTER	144	288	0	72	0	0	0	0	0	0
11	CON	PASSENGER	0	0	0	0	0	0	0	0	0	0
11	CON	TANKER	0	0	0	0	0	0	0	0	0	0
11	LOS	FREIGHTER	7	9	0	2	0	1	0	1	0	1
11	LOS	PASSENGER	0	0	0	0	0	0	0	0	0	0

Table A.4.9 Risk-Based Rankings - Foreign Flag, MSO, Casualty Frequency, Pollution												
Bin			Level III Intervention Strategy Importance									
District	MSO	Service	Cargo/Poll	Steering	Documents	Drills	Auxiliary Sys.	Power Plant	Fire Prevention	Hull	Lifesaving	Other
11	LOS	TANKER	3	6	0	0	0	1	0	0	0	0
11	SBC	FREIGHTER	0	0	0	0	0	0	0	0	0	0
11	SBC	PASSENGER	0	0	0	0	0	0	0	0	0	0
11	SBC	TANKER	0	0	0	0	0	0	0	0	0	0
11	SDC	FREIGHTER	0	0	0	0	0	0	0	0	0	0
11	SDC	PASSENGER	0	0	0	0	0	0	0	0	0	0
11	SDC	TANKER	0	0	0	0	0	0	0	0	0	0
11	SFC	FREIGHTER	32	11	0	5	0	2	2	2	0	0
11	SFC	PASSENGER	0	0	0	0	0	0	0	0	0	0
11	SFC	TANKER	10	3	0	0	0	0	0	0	0	0
13	GRA	FREIGHTER	0	0	0	0	0	0	0	0	0	0
13	GRA	PASSENGER	0	0	0	0	0	0	0	0	0	0
13	GRA	TANKER	0	0	0	0	0	0	0	0	0	0
13	POR	FREIGHTER	77	58	0	19	0	14	5	5	0	19
13	POR	PASSENGER	0	0	0	0	0	0	0	0	0	0
13	POR	TANKER	2	0	0	1	0	0	0	0	0	0
13	SEA	FREIGHTER	16	10	0	2	0	0	2	0	0	0
13	SEA	PASSENGER	0	0	0	0	0	0	0	0	0	0
13	SEA	TANKER	1	1	0	0	0	0	0	0	0	0

Table A.4.9 Risk-Based Rankings - Foreign Flag, MSO, Casualty Frequency, Pollution												
Bin			Level III Intervention Strategy Importance									
District	MSO	Service	Cargo/Poll	Steering	Documents	Drills	Auxiliary Sys.	Power Plant	Fire Prevention	Hull	Lifeaving	Other
14	ASO	FREIGHTER	0	0	0	0	0	0	0	0	0	0
14	ASO	PASSENGER	0	0	0	0	0	0	0	0	0	0
14	ASO	TANKER	0	0	0	0	0	0	0	0	0	0
14	GUA	FREIGHTER	5	0	0	0	0	0	0	0	0	0
14	GUA	PASSENGER	0	0	0	0	0	0	0	0	0	0
14	GUA	TANKER	0	0	0	0	0	0	0	0	0	0
14	HON	FREIGHTER	3	2	0	0	0	1	0	0	0	0
Bad Data	HON	PASSENGER	0	0	0	0	0	0	0	0	0	0
14	HON	TANKER	0	0	0	0	0	0	0	0	0	0
17	ANC	FREIGHTER	0	0	0	0	0	0	0	0	0	0
17	ANC	PASSENGER	0	0	0	0	0	0	0	0	0	0
17	ANC	TANKER	0	0	0	0	0	0	0	0	0	0
17	DHA	FREIGHTER	0	0	0	0	0	0	0	0	0	0
17	DHA	PASSENGER	0	0	0	0	0	0	0	0	0	0
17	DHA	TANKER	0	0	0	0	0	0	0	0	0	0
17	JUN	FREIGHTER	1	2	0	0	0	0	0	0	0	0
17	JUN	PASSENGER	0	0	0	0	0	0	0	0	0	0
17	JUN	TANKER	0	0	0	0	0	0	0	0	0	0
17	KEN	FREIGHTER	0	0	0	0	0	0	0	0	0	0

Table A.4.9 Risk-Based Rankings - Foreign Flag, MSO, Casualty Frequency, Pollution

Bin		Level III Intervention Strategy Importance										
District	MSO	Service	Cargo/Poll	Steering	Documents	Drills	Auxiliary Sys.	Power Plant	Fire Prevention	Hull	Lifesaving	Other
17	KEN	PASSENGER	0	0	0	0	0	0	0	0	0	0
17	KEN	TANKER	0	0	0	0	0	0	0	0	0	0
17	KET	FREIGHTER	1	0	0	0	0	0	0	0	0	0
17	KET	PASSENGER	0	0	0	0	0	0	0	0	0	0
17	KET	TANKER	0	0	0	0	0	0	0	0	0	0
17	KOD	FREIGHTER	0	0	0	0	0	0	0	0	0	0
17	KOD	PASSENGER	0	0	0	0	0	0	0	0	0	0
17	KOD	TANKER	0	0	0	0	0	0	0	0	0	0
17	SIT	FREIGHTER	0	0	0	0	0	0	0	0	0	0
17	SIT	PASSENGER	0	0	0	0	0	0	0	0	0	0
17	SIT	TANKER	0	0	0	0	0	0	0	0	0	0
17	VAL	FREIGHTER	0	0	0	0	0	0	0	0	0	0
17	VAL	PASSENGER	0	0	0	0	0	0	0	0	0	0
17	VAL	TANKER	0	0	0	0	0	0	0	0	0	0

## Appendix B MSMS SYBASE Query Input And Output Files

### B.1 Aggregation Of Data For U.S. Flag Deep Draft Vessels

The logic of the binning process illustrated in Figure 3.1 is:

- Maritime Casualty - All CIRT records are queried for the MCCASE number, which is matched against the MCCASE field in the Casualty Vessel Involved Record Table (CIVT) to identify those CIRT records that involve vessels. This allows for each specific vessel involved in a particular casualty report to be identified and counted as a "vessel casualty". All non-vessel records are filtered from further queries at this point.

- Vessel Flag - After the CIRT records have been filtered based on vessel involvement they are then filter for flag against the CIVT and VIDT tables using the VKEY field.

- Casualty Consequence - Four characteristics of maritime vessel casualties have been defined for the purpose of aggregating data. The first characteristic is "Vessel", meaning that the MCCASE number in a particular CIRT record has been matched to one or more MCCASE numbers in CIVT, as discussed above under the Maritime Casualty attribute. This attribute identifies each CIVT record as an individual vessel casualty. Thus, if more than one vessel is involved in a specific casualty logged in a particular CIVT record then each such vessel is counted as an individual vessel casualty. This characteristic leads to the calculation of high level casualty frequency rates that incorporated all vessel casualties regardless of the nature of the consequence. All of the other characteristics represent subsets of the set of all vessel casualties.

The next characteristic is "Pollution", meaning that a vessel casualty occurred that resulted in a pollution incident. This characteristic leads to the calculation of vessel casualty rates based only on vessel casualties that result in pollution incidents. This information is collected by matching the MCCASE number in each CIRT casualty report with the MCCASE numbers in the CIVT and the Casualty Pollution Details Record Table (CPDT) to identify pollution events that correspond to each CIRT casualty report.

The next characteristic is "Death", meaning at least one death occurred as the result of a vessel casualty. This characteristic leads to the calculation of casualty frequencies based on fatalities only, yielding an estimate of "Deaths/Inspection" frequency. This information is collected by matching MCCASE in each CIRT record to the CIRT and Casualty Personnel Casualty Record Table (CPCT) to count the number of Deaths resulting from the vessel casualties.

The last characteristic is "Injury", meaning that a vessel casualty resulted in at least injury. This characteristic leads to the calculation of casualty frequencies based on non-fatal injuries, yielding an estimate of "injuries/Inspection" frequency. This information is collected in the same way as for Deaths. In the event that a particular casualty

involves both Deaths and injuries, the casualty is binned under both the "death" and "injury" characteristic.

Vessel Service - The data can be aggregated so that casualty frequency rates are calculated based on the type of service of the vessel.

### **Aggregation Of Data For Districts and MSOs**

Figures 3.2 and 3.3 represent similar but more detailed aggregation of casualty data. Figure 3.2 represents the aggregation of data by the District that last inspected a vessel before the occurrence of a casualty. Figure 3.3 represents the aggregation of data by the MSO that last inspected a vessel before the occurrence of a casualty. Each vessel casualty recorded in CIRT was "assigned" or binned to the last District and MSO where it received an inspection. The inspecting District and MSO were identified by comparing the casualty date in each CIRT vessel casualty report to the inspection dates for the relevant vessel in the Inspection Report Identification Table (IRIT). In this way, casualty counts were calculated for each District and MSO based on the location of the last inspection. Information in CIRT and IRIT was linked using VILT, VINTAB, the Port Identification Table (PORTS), and VIDT.

The total number of vessel inspections conducted by each District and MSO was calculated by counting the number of IRIT records logged by each District and MSO. The MSO for each IRIT record was identified directly using the UNIT element name in each IRIT record. The District for each IRIT record was identified by matching the UNIT element name to its appropriate District in PORTS. No distinction was made between the different types of inspections performed. IRIT contains indicator fields for each type of inspection that might be performed by an MSO (e.g., Initial Inspection, Certificate Of Inspection (COI), Annual Reinspection, Hull Inspection). As stated in the introduction of this report, the MSMS database is not designed to link casualties to particular inspection activities. Additionally, a particular IRIT record could have more than one indicator marked. This would indicate a situation in which a vessel underwent more than one inspection at the same time. Although some inspections are clearly unique in terms of the scope of inspection (e.g., Hull Inspection), other inspections (such as the COI and Annual Reinspection) may be designed to consider similar risks, even if at different levels of scrutiny. Therefore, the casualty frequency estimates here present a high level of data aggregation with respect to the type of inspection activities performed. A more detailed aggregation of vessel casualty data might be possible if casualty casual data in the Casualty Event Record Table (CEVT) could be used to reliably identify the specific USCG inspections that are designed to cover the types of events attributed to each vessel casualty. Based on discussions with USCG Marine Planning personnel at the May 13, 1994 project review meeting, future queries for U.S. flag inspections will focus only on the COI, the Annual Reinspection, and the Hull inspection.

All data queries were restricted to the MSMS database for the time period of January 1991 through October, 1993. Data consistency between the 1980's and the 1990's in IRIT was a

concern. For the time period of 1983 to 1990, approximately 114,000 IRIT records were logged. For the time period 1991 through October 1993, approximately 166,000 records were logged. This represents an average of only about 14,000 records annually during the 1980's versus over 40,000 records annually during the 1990's. The focus of this assessment was therefore limited to the 1991 through 1993 time period. This is consistent with the advent of the use of MINMOD as the repository of maritime casualty data.



## B.2 INFORMIX Query Files For The Risk-Based Ranking Analysis

This appendix contains the SQL programs used to query the MSMS database and construct the data sets used in the econometric analysis. The programs are written in INFORMIX (ISQL) and are easily translated into other SQL-based database software that are designed to manage relational databases such as SYBASE. Minor syntax modifications may be needed before these programs can be implemented from SQL-based software other than INFORMIX.

### B.2.1 INFORMIX Preliminary Queries For Setting Up INFORMIX Tables From The MSMS MINMOD Database

DATABASE msms

MAIN

```
DEFINE counter INT,  
      p_brst RECORD LIKE brst.*
```

```
DECLARE brst_cursor CURSOR FOR  
  SELECT * FROM brst  
  FOR UPDATE
```

```
LET counter = 0
```

```
FOREACH brst_cursor INTO p_brst.*
```

```
LET p_brst.d2b1 = 0  
LET p_brst.d2b2 = 0  
LET p_brst.d2b3 = 0  
LET p_brst.d31  = 0  
LET p_brst.d32  = 0  
LET p_brst.d33  = 0  
LET p_brst.d34  = 0  
LET p_brst.d35  = 0  
LET p_brst.d36  = 0  
LET p_brst.d37  = 0  
LET p_brst.d38  = 0  
LET p_brst.d39  = 0
```

```
IF p_brst.activity_typ = "POLL PREV" THEN  
  LET p_brst.d2b1 = 1.0  
  LET p_brst.d2b2 = 1.0  
  LET p_brst.d2b3 = 1.0
```

LET p\_brst.d31 = 1.0  
END IF

IF p\_brst.activity\_typ = "NAV SAFETY" THEN  
LET p\_brst.d2b1 = 1.0  
LET p\_brst.d2b2 = 1.0  
LET p\_brst.d2b3 = 1.0  
LET p\_brst.d32 = 1.0  
END IF

IF p\_brst.activity\_typ = "ANNUAL EXAMINATION" THEN  
LET p\_brst.d2b1 = 1.0  
LET p\_brst.d2b2 = 1.0  
LET p\_brst.d2b3 = 1.0  
END IF

IF p\_brst.activity\_typ = "FIRE PROT" THEN  
LET p\_brst.d2b1 = 1.0  
LET p\_brst.d2b2 = 1.0  
LET p\_brst.d2b3 = 1.0  
LET p\_brst.d37 = 1.0  
END IF

IF p\_brst.activity\_typ = "MARPOL REQ" THEN  
LET p\_brst.d2b1 = 1.0  
LET p\_brst.d2b2 = 1.0  
LET p\_brst.d2b3 = 1.0  
LET p\_brst.d31 = 0.2  
LET p\_brst.d32 = 0.2  
LET p\_brst.d33 = 0.2  
LET p\_brst.d34 = 0.2  
LET p\_brst.d37 = 0.2  
END IF

IF p\_brst.activity\_typ = "LOADLINE" THEN  
LET p\_brst.d2b1 = 1.0  
LET p\_brst.d2b2 = 1.0  
LET p\_brst.d2b3 = 1.0  
LET p\_brst.d33 = 0.5  
LET p\_brst.d38 = 0.5  
END IF

IF p\_brst.activity\_typ = "MANNING" THEN  
LET p\_brst.d2b1 = 1.0

```
    LET p_brst.d2b2 = 1.0
    LET p_brst.d2b3 = 1.0
    LET p_brst.d33 = 1.0
END IF
```

```
IF p_brst.activity_typ = "PASS FRGT" THEN
    LET p_brst.d2b1 = 1.0
END IF
```

```
IF p_brst.activity_typ = "CARGO VENT" THEN
    LET p_brst.d2b2 = 1.0
    LET p_brst.d31 = 1.0
END IF
```

```
IF p_brst.activity_typ = "CARGO PIPE" THEN
    LET p_brst.d2b2 = 1.0
    LET p_brst.d31 = 1.0
END IF
```

```
IF p_brst.activity_typ = "ANNUAL FREIGH" THEN
    LET p_brst.d2b1 = 1.0
END IF
```

```
IF p_brst.activity_typ = "DISCREPANCY FOLLOWUP" THEN
    LET p_brst.d2b1 = 1.0
    LET p_brst.d2b2 = 1.0
    LET p_brst.d2b3 = 1.0
    LET p_brst.d31 = 0.1667
    LET p_brst.d32 = 0.1667
    LET p_brst.d33 = 0.1667
    LET p_brst.d34 = 0.1667
    LET p_brst.d37 = 0.1667
    LET p_brst.d39 = 0.1667
END IF
```

```
IF p_brst.activity_typ = "DOCUMENT CHEC" THEN
    LET p_brst.d2b1 = 1.0
    LET p_brst.d2b2 = 1.0
    LET p_brst.d2b3 = 1.0
    LET p_brst.d33 = 1.0
END IF
```

```
IF p_brst.activity_typ = "MARPOL V" THEN
    LET p_brst.d2b1 = 1.0
```

```
LET p_brst.d2b2 = 1.0
LET p_brst.d2b3 = 1.0
LET p_brst.d31 = 0.333
LET p_brst.d32 = 0.333
LET p_brst.d33 = 0.333
END IF
```

```
IF p_brst.activity_typ = "TANK VESS" THEN
  LET p_brst.d2b2 = 1.0
END IF
```

```
IF p_brst.activity_typ = "DISCREP FLWUP" THEN
  LET p_brst.d2b1 = 1.0
  LET p_brst.d2b2 = 1.0
  LET p_brst.d2b3 = 1.0
  LET p_brst.d31 = 0.1667
  LET p_brst.d32 = 0.1667
  LET p_brst.d33 = 0.1667
  LET p_brst.d34 = 0.1667
  LET p_brst.d37 = 0.1667
  LET p_brst.d39 = 0.1667
END IF
```

```
IF p_brst.activity_typ = "MARPOL GEN" THEN
  LET p_brst.d2b1 = 1.0
  LET p_brst.d2b2 = 1.0
  LET p_brst.d2b3 = 1.0
  LET p_brst.d31 = 0.3333
  LET p_brst.d32 = 0.3333
  LET p_brst.d33 = 0.3333
END IF
```

```
IF p_brst.activity_typ = "CREW LIC. CHK" THEN
  LET p_brst.d2b1 = 1.0
  LET p_brst.d2b2 = 1.0
  LET p_brst.d2b3 = 1.0
  LET p_brst.d33 = 1.0
END IF
```

```
IF p_brst.activity_typ = "WS SYS MAINT" THEN
END IF
```

```
IF p_brst.activity_typ = "MON SHIP OIL" THEN
END IF
```

IF p\_brst.activity\_typ = "ANNUAL SHIP" THEN  
END IF

IF p\_brst.activity\_typ = "SOL TRANS" THEN  
END IF

IF p\_brst.activity\_typ = "MARPOL I" THEN  
    LET p\_brst.d2b1 = 1.0  
    LET p\_brst.d2b2 = 1.0  
    LET p\_brst.d2b3 = 1.0  
    LET p\_brst.d31 = 0.5  
    LET p\_brst.d33 = 0.5  
END IF

IF p\_brst.activity\_typ = "IGS" THEN  
    LET p\_brst.d2b2 = 1.0  
    LET p\_brst.d31 = 1.0  
END IF

IF p\_brst.activity\_typ = "CONTAIN INSP" THEN  
END IF

IF p\_brst.activity\_typ = "PUMP ROOM" THEN  
END IF

IF p\_brst.activity\_typ = "ANNUAL CONTAI" THEN  
    LET p\_brst.d2b1 = 1.0  
END IF

IF p\_brst.activity\_typ = "MARPOL DIS" THEN  
END IF

IF p\_brst.activity\_typ = "COW" THEN  
    LET p\_brst.d2b2 = 1.0  
    LET p\_brst.d31 = 1.0  
END IF

IF p\_brst.activity\_typ = "MARPOL II" THEN  
    LET p\_brst.d2b1 = 1.0  
    LET p\_brst.d2b2 = 1.0  
    LET p\_brst.d2b3 = 1.0  
    LET p\_brst.d31 = 0.5  
    LET p\_brst.d33 = 0.5

```

END IF

IF p_brst.activity_typ = "MARPOL EQU" THEN
    LET p_brst.d2b1 = 1.0
    LET p_brst.d2b2 = 1.0
    LET p_brst.d2b3 = 1.0
    LET p_brst.d31 = 0.5
    LET p_brst.d33 = 0.5
END IF

IF p_brst.activity_typ = "ANNUAL PASSEN" THEN
    LET p_brst.d33 = 1.0
END IF

IF p_brst.activity_typ = "ANNUAL FREIGH  ON" THEN
    LET p_brst.d2b1 = 1.0
END IF

IF p_brst.activity_typ = "DISCREP FLWUP  OWUP" THEN
    LET p_brst.d2b1 = 1.0
    LET p_brst.d2b2 = 1.0
    LET p_brst.d2b3 = 1.0
    LET p_brst.d31 = 0.1667
    LET p_brst.d32 = 0.1667
    LET p_brst.d33 = 0.1667
    LET p_brst.d34 = 0.1667
    LET p_brst.d37 = 0.1667
    LET p_brst.d39 = 0.1667
END IF

UPDATE brst
    SET brst.* = p_brst.*
    WHERE CURRENT OF brst_cursor

LET counter = counter + 1

IF counter mod 1000 = 0 THEN
    DISPLAY counter, " rows have been updated in BRST"
END IF

END FOREACH

END MAIN

```

DATABASE msms

MAIN

DEFINE counter INT,  
p\_brst RECORD LIKE brst.\*

DECLARE brst\_cursor CURSOR FOR  
SELECT \* FROM brst  
FOR UPDATE

LET counter = 0

FOREACH brst\_cursor INTO p\_brst.\*

LET p\_brst.d2a1 = 0

LET p\_brst.d2a2 = 0

LET p\_brst.d2a3 = 0

IF p\_brst.activity\_typ = "DISCREPANCY FOLLOWUP" THEN

LET p\_brst.d2b1 = 1

LET p\_brst.d2b2 = 1

LET p\_brst.d2b3 = 1

LET p\_brst.d31 = 1

LET p\_brst.d32 = 1

LET p\_brst.d33 = 1

LET p\_brst.d34 = 1

LET p\_brst.d37 = 1

LET p\_brst.d39 = 1

END IF

UPDATE brst

SET brst.\* = p\_brst.\*

WHERE CURRENT OF brst\_cursor

LET counter = counter + 1

IF counter mod 1000 = 0 THEN

DISPLAY counter, " rows have been updated in BRST"  
END IF

END FOREACH

END MAIN

DATABASE msms

MAIN

DEFINE counter INT,  
p\_cevt RECORD LIKE cevt.\*

DECLARE cevt\_cursor CURSOR FOR  
SELECT \* FROM cevt  
FOR UPDATE

LET counter = 0

FOREACH cevt\_cursor INTO p\_cevt.\*

LET p\_cevt.dtype = "0"

IF p\_cevt.type = "POLLUTION" THEN

LET p\_cevt.dtype = "1"

END IF

IF p\_cevt.type = "ALLISION" THEN

LET p\_cevt.dtype = "2"

END IF

IF p\_cevt.type = "GROUNDING ACC" THEN

LET p\_cevt.dtype = "2"

END IF

IF p\_cevt.type = "LOSS VES CNTRL" THEN

LET p\_cevt.dtype = "2"

END IF

IF p\_cevt.type = "PERSONNEL CAS" THEN

LET p\_cevt.dtype = "4"

END IF

IF p\_cevt.type = "LOSS ELEC POWER" THEN

LET p\_cevt.dtype = "6"

END IF

IF p\_cevt.type = "FIRE" THEN

LET p\_cevt.dtype = "7"

END IF

IF p\_cevt.type = "SINK" THEN

LET p\_cevt.dtype = "8"

END IF

IF p\_cevt.type = "FLOODING" THEN

LET p\_cevt.dtype = "8"

END IF



```
IF p_cevt.type = "STRUCTURAL FAIL" THEN
  LET p_cevt.dtype = "8"
END IF

LET p_cevt.counter = 1

UPDATE cevt
  SET cevt.* = p_cevt.*
  WHERE CURRENT OF cevt_cursor

LET counter = counter + 1

IF counter mod 1000 = 0 THEN
  DISPLAY counter, " rows have been updated in CEVT"
END IF

END FOREACH

END MAIN
```

DATABASE msms

MAIN

DEFINE counter INT,  
p\_cpct RECORD LIKE cpct.\*

DECLARE cpct\_cursor CURSOR FOR  
SELECT \* FROM cpct  
FOR UPDATE

LET counter = 0

FOREACH cpct\_cursor INTO p\_cpct.\*

LET p\_cpct.ddead = 0  
LET p\_cpct.dinjury = 0

IF p\_cpct.dead = "X" THEN  
LET p\_cpct.ddead = 1  
END IF

IF p\_cpct.injury = "X" THEN  
LET p\_cpct.dinjury = 1  
END IF

UPDATE cpct  
SET cpct.\* = p\_cpct.\*  
WHERE CURRENT OF cpct\_cursor

LET counter = counter + 1

IF counter mod 1000 = 0 THEN  
DISPLAY counter, " rows have been updated in CPCT"  
END IF

END FOREACH

END MAIN

DATABASE msms

MAIN

DEFINE counter INT,  
p\_crst RECORD LIKE crst.\*

DECLARE crst\_cursor CURSOR FOR  
SELECT \* FROM crst  
FOR UPDATE

LET counter = 0

FOREACH crst\_cursor INTO p\_crst.\*

LET p\_crst.d2a1 = 0  
LET p\_crst.d2a2 = 0  
LET p\_crst.d2a3 = 0  
LET p\_crst.d31 = 0  
LET p\_crst.d32 = 0  
LET p\_crst.d33 = 0  
LET p\_crst.d34 = 0  
LET p\_crst.d35 = 0  
LET p\_crst.d36 = 0  
LET p\_crst.d37 = 0  
LET p\_crst.d38 = 0  
LET p\_crst.d39 = 0

IF p\_crst.inspect\_typ = "ANNUAL EXAMINATION" THEN  
END IF

IF p\_crst.inspect\_typ = "POLL PREV" THEN  
LET p\_crst.d2a1 = 1.0  
LET p\_crst.d2a2 = 1.0  
LET p\_crst.d31 = 1.0  
END IF

IF p\_crst.inspect\_typ = "LOADLINE" THEN  
LET p\_crst.d2a1 = 1.0  
LET p\_crst.d2a2 = 1.0  
LET p\_crst.d2a3 = 1.0  
LET p\_crst.d38 = 1.0  
END IF

IF p\_crst.inspect\_typ = "PASS FRGT" THEN  
END IF

IF p\_crst.inspect\_typ = "NAV SAFETY" THEN  
    LET p\_crst.d2a1 = 1.0  
    LET p\_crst.d2a2 = 1.0  
    LET p\_crst.d32 = 1.0  
END IF

IF p\_crst.inspect\_typ = "REINSPECTION" THEN  
    LET p\_crst.d2a2 = 1.0  
    LET p\_crst.d31 = 0.1111  
    LET p\_crst.d32 = 0.1111  
    LET p\_crst.d33 = 0.1111  
    LET p\_crst.d34 = 0.1111  
    LET p\_crst.d35 = 0.1111  
    LET p\_crst.d36 = 0.1111  
    LET p\_crst.d37 = 0.1111  
    LET p\_crst.d38 = 0.1111  
    LET p\_crst.d39 = 0.1111  
END IF

IF p\_crst.inspect\_typ = "MARPOL REQ" THEN  
    LET p\_crst.d2a1 = 1.0  
    LET p\_crst.d2a2 = 1.0  
    LET p\_crst.d31 = 1.0  
END IF

IF p\_crst.inspect\_typ = "ADMIN" THEN  
    LET p\_crst.d2a1 = 1.0  
    LET p\_crst.d2a2 = 1.0  
    LET p\_crst.d2a3 = 1.0  
    LET p\_crst.d31 = 0.1111  
    LET p\_crst.d32 = 0.1111  
    LET p\_crst.d33 = 0.1111  
    LET p\_crst.d34 = 0.1111  
    LET p\_crst.d35 = 0.1111  
    LET p\_crst.d36 = 0.1111  
    LET p\_crst.d37 = 0.1111  
    LET p\_crst.d38 = 0.1111  
    LET p\_crst.d39 = 0.1111  
END IF

IF p\_crst.inspect\_typ = "CARGO VENT" THEN

```

        LET p_crst.d2a1 = 1.0
        LET p_crst.d2a2 = 1.0
        LET p_crst.d2a3 = 1.0
        LET p_crst.d31 = 1.0
        LET p_crst.d38 = 1.0
    END IF

    IF p_crst.inspect_typ = "MANNING" THEN
        LET p_crst.d2a1 = 1.0
        LET p_crst.d2a2 = 1.0
        LET p_crst.d33 = 1.0
    END IF

    IF p_crst.inspect_typ = "CARGO PIPE" THEN
        LET p_crst.d2a1 = 1.0
        LET p_crst.d2a2 = 1.0
        LET p_crst.d31 = 1.0
    END IF

    IF p_crst.inspect_typ = "FIRE PROT" THEN
        LET p_crst.d2a1 = 1.0
        LET p_crst.d2a2 = 1.0
        LET p_crst.d37 = 1.0
    END IF

    IF p_crst.inspect_typ = "HULL EXAM" THEN
        LET p_crst.d2a3 = 1.0
        LET p_crst.d31 = 0.1111
        LET p_crst.d32 = 0.1111
        LET p_crst.d33 = 0.1111
        LET p_crst.d34 = 0.1111
        LET p_crst.d35 = 0.1111
        LET p_crst.d36 = 0.1111
        LET p_crst.d37 = 0.1111
        LET p_crst.d38 = 0.1111
        LET p_crst.d39 = 0.1111
    END IF

    IF p_crst.inspect_typ = "TANK VESS" THEN
    END IF

    IF p_crst.inspect_typ = "DISCREPANCY FOLLOWUP" THEN
    END IF

```

IF p\_crst.inspect\_typ = "DD EXTEND" THEN  
    LET p\_crst.d2a3 = 1.0  
    LET p\_crst.d38 = 1.0  
END IF

IF p\_crst.inspect\_typ = "COC" THEN  
END IF

IF p\_crst.inspect\_typ = "CONTROL VERIF" THEN  
END IF

IF p\_crst.inspect\_typ = "SOL TRANS" THEN  
END IF

IF p\_crst.inspect\_typ = "DEFICIENCY CK" THEN  
    LET p\_crst.d2a1 = 1.0  
    LET p\_crst.d2a2 = 1.0  
    LET p\_crst.d2a3 = 1.0  
    LET p\_crst.d31 = 0.1111  
    LET p\_crst.d32 = 0.1111  
    LET p\_crst.d33 = 0.1111  
    LET p\_crst.d34 = 0.1111  
    LET p\_crst.d35 = 0.1111  
    LET p\_crst.d36 = 0.1111  
    LET p\_crst.d37 = 0.1111  
    LET p\_crst.d38 = 0.1111  
    LET p\_crst.d39 = 0.1111  
END IF

IF p\_crst.inspect\_typ = "CERTIFICATION" THEN  
    LET p\_crst.d2a1 = 1.0  
    LET p\_crst.d31 = 0.1111  
    LET p\_crst.d32 = 0.1111  
    LET p\_crst.d33 = 0.1111  
    LET p\_crst.d34 = 0.1111  
    LET p\_crst.d35 = 0.1111  
    LET p\_crst.d36 = 0.1111  
    LET p\_crst.d37 = 0.1111  
    LET p\_crst.d38 = 0.1111  
    LET p\_crst.d39 = 0.1111  
END IF

IF p\_crst.inspect\_typ = "LIFERAFT SVC" THEN  
    LET p\_crst.d2a1 = 1.0

```

        LET p_crst.d2a2 = 1.0
        LET p_crst.d39 = 1.0
    END IF

    IF p_crst.inspect_typ = "IGS" THEN
        LET p_crst.d2a1 = 1.0
        LET p_crst.d2a2 = 1.0
        LET p_crst.d31 = 1.0
    END IF

    IF p_crst.inspect_typ = "MARPOL EQU" THEN
        LET p_crst.d2a1 = 1.0
        LET p_crst.d2a2 = 1.0
        LET p_crst.d31 = 1.0
    END IF

    IF p_crst.inspect_typ = "MARPOLII SURV" THEN
        LET p_crst.d2a1 = 1.0
        LET p_crst.d2a2 = 1.0
        LET p_crst.d31 = 1.0
    END IF

    IF p_crst.inspect_typ = "MARPOL" THEN
    END IF

    IF p_crst.inspect_typ = "MARPOL DIS" THEN
    END IF

    IF p_crst.inspect_typ = "DAMAGE SURVEY" THEN
        LET p_crst.d2a3 = 1.0
        LET p_crst.d38 = 1.0
    END IF

    IF p_crst.inspect_typ = "INITIAL CERT" THEN
        LET p_crst.d2a1 = 1.0
        LET p_crst.d2a2 = 0
        LET p_crst.d2a3 = 0
        LET p_crst.d31 = 0.1111
        LET p_crst.d32 = 0.1111
        LET p_crst.d33 = 0.1111
        LET p_crst.d34 = 0.1111
        LET p_crst.d35 = 0.1111
        LET p_crst.d36 = 0.1111
        LET p_crst.d37 = 0.1111
    
```

```

        LET p_crst.d38 = 0.1111
        LET p_crst.d39 = 0.1111
    END IF

    IF p_crst.inspect_typ = "L/S SVC OTHER" THEN
        LET p_crst.d2a1 = 1.0
        LET p_crst.d2a2 = 1.0
        LET p_crst.d39 = 1.0
    END IF

    IF p_crst.inspect_typ = "MACHINERY" THEN
        LET p_crst.d2a1 = 1.0
        LET p_crst.d2a2 = 1.0
        LET p_crst.d2a3 = 1.0
        LET p_crst.d31 = 0.2
        LET p_crst.d32 = 0.2
        LET p_crst.d35 = 0.2
        LET p_crst.d36 = 0.2
        LET p_crst.d37 = 0.2
    END IF

    IF p_crst.inspect_typ = "CONSTRUCTION" THEN
        LET p_crst.d2a1 = 1.0
        LET p_crst.d2a3 = 1.0
        LET p_crst.d38 = 1.0
    END IF

    IF p_crst.inspect_typ = "WELDER QUAL" THEN
    END IF

    IF p_crst.inspect_typ = "OVERSIGHT" THEN
        LET p_crst.d2a1 = 1.0
    END IF

    IF p_crst.inspect_typ = "MARPOLII TEST" THEN
        LET p_crst.d2a2 = 1.0
        LET p_crst.d31 = 1.0
    END IF

    IF p_crst.inspect_typ = "ANNUAL" THEN
    END IF

    IF p_crst.inspect_typ = "PUMP ROOM" THEN
        LET p_crst.d2a1 = 1.0
    
```



```
    LET p_crst.d2a2 = 1.0
    LET p_crst.d2a3 = 1.0
    LET p_crst.d31 = 0.3333
    LET p_crst.d35 = 0.3333
    LET p_crst.d38 = 0.3333
END IF
```

```
IF p_crst.inspect_typ = "CONSTRUCT O/S" THEN
    LET p_crst.d2a1 = 1.0
    LET p_crst.d38 = 1.0
END IF
```

```
IF p_crst.inspect_typ = "OP MAN REVIEW" THEN
    LET p_crst.d2a1 = 1.0
    LET p_crst.d2a2 = 1.0
    LET p_crst.d31 = 1.0
END IF
```

```
IF p_crst.inspect_typ = "MARPOL II" THEN
END IF
```

```
IF p_crst.inspect_typ = "ANNUAL FREIGH" THEN
END IF
```

```
IF p_crst.inspect_typ = "NLS SURVEY" THEN
    LET p_crst.d2a1 = 1.0
    LET p_crst.d2a2 = 1.0
END IF
```

```
IF p_crst.inspect_typ = "MARPOL V" THEN
    LET p_crst.d2a1 = 1.0
    LET p_crst.d2a2 = 1.0
    LET p_crst.d31 = 1.0
END IF
```

```
IF p_crst.inspect_typ = "INCL EXP" THEN
    LET p_crst.d2a1 = 1.0
    LET p_crst.d38 = 1.0
END IF
```

```
IF p_crst.inspect_typ = "LIFE JACKET" THEN
    LET p_crst.d2a1 = 1.0
    LET p_crst.d2a2 = 1.0
    LET p_crst.d39 = 1.0
```

END IF

IF p\_crst.inspect\_typ = "MARPOL GEN" THEN  
END IF

IF p\_crst.inspect\_typ = "REFLAGGING" THEN  
    LET p\_crst.d2a1 = 1.0  
    LET p\_crst.d31 = 0.1111  
    LET p\_crst.d32 = 0.1111  
    LET p\_crst.d33 = 0.1111  
    LET p\_crst.d34 = 0.1111  
    LET p\_crst.d35 = 0.1111  
    LET p\_crst.d36 = 0.1111  
    LET p\_crst.d37 = 0.1111  
    LET p\_crst.d38 = 0.1111  
    LET p\_crst.d39 = 0.1111  
END IF

IF p\_crst.inspect\_typ = "FIREFIGHTING" THEN  
    LET p\_crst.d2a1 = 1.0  
    LET p\_crst.d2a2 = 1.0  
    LET p\_crst.d37 = 1.0  
END IF

IF p\_crst.inspect\_typ = "COW" THEN  
    LET p\_crst.d2a1 = 1.0  
    LET p\_crst.d2a2 = 1.0  
    LET p\_crst.d31 = 1.0  
END IF

IF p\_crst.inspect\_typ = "ANNUAL SHIP" THEN  
END IF

IF p\_crst.inspect\_typ = "POL PREV EQUIP" THEN  
    LET p\_crst.d2a1 = 1.0  
    LET p\_crst.d2a2 = 1.0  
    LET p\_crst.d31 = 1.0  
END IF

IF p\_crst.inspect\_typ = "SANITARY INSP" THEN  
    LET p\_crst.d2a1 = 1.0  
    LET p\_crst.d2a2 = 1.0  
    LET p\_crst.d35 = 1.0  
END IF

```

IF p_crst.inspect_typ = "DWT SURVEY" THEN
    LET p_crst.d2a1 = 1.0
    LET p_crst.d38 = 1.0
END IF

IF p_crst.inspect_typ = "DISCREP FLWUP" THEN
END IF

IF p_crst.inspect_typ = "FIRE PROTECTN" THEN
    LET p_crst.d2a1 = 1.0
    LET p_crst.d2a2 = 1.0
    LET p_crst.d2a3 = 1.0
    LET p_crst.d37 = 1.0
END IF

IF p_crst.inspect_typ = "ANNUAL FREIGH  ON" THEN
END IF

IF p_crst.inspect_typ = "DISCREP FLWUP  OWUP" THEN
END IF

IF p_crst.inspect_typ = "SAFETY EQ MAT" THEN
END IF

IF p_crst.inspect_typ = "MON SHIP DC" THEN
END IF

IF p_crst.inspect_typ = "MARPOL I" THEN
END IF

IF p_crst.inspect_typ = "CREW LIC. CHK" THEN
    LET p_crst.d2a1 = 1.0
    LET p_crst.d2a2 = 1.0
    LET p_crst.d33 = 1.0
END IF

IF p_crst.inspect_typ = "COA MARPOL I" THEN
END IF

IF p_crst.inspect_typ = "COA MARPOL V" THEN
END IF

IF p_crst.inspect_typ = "COA MARPOL II" THEN

```

END IF

UPDATE crst

SET crst.\* = p\_crst.\*

WHERE CURRENT OF crst\_cursor

LET counter = counter + 1

IF counter mod 1000 = 0 THEN

DISPLAY counter, " rows have been updated in CRST"

END IF

END FOREACH

END MAIN

DATABASE msms

MAIN

DEFINE counter INT,  
    p\_last RECORD LIKE insp.\*

DECLARE last\_cursor CURSOR FOR  
    SELECT \* FROM insp  
    FOR UPDATE

LET counter = 0

FOREACH last\_cursor INTO p\_last.\*

IF p\_last.service = "FREIGHT SHIP" THEN

    LET p\_last.service = "FREIGHTER"

END IF

IF p\_last.service = "PUBLIC FREIGHT" THEN

    LET p\_last.service = "FREIGHTER"

END IF

IF p\_last.service = "TANK SHIP" THEN

    LET p\_last.service = "TANKER"

END IF

IF p\_last.service = "PUB. TANKSHIP/BARGE" THEN

    LET p\_last.service = "TANKER"

END IF

IF p\_last.service = "PASSENGER SHIP" THEN

    LET p\_last.service = "PASSENGER"

END IF

UPDATE insp

    SET insp.\* = p\_last.\*

    WHERE CURRENT OF last\_cursor

LET counter = counter + 1

IF counter mod 1000 = 0 THEN

    DISPLAY counter, " rows have been updated in INSP"

END IF

END FOREACH

END MAIN

DATABASE msms

MAIN

DEFINE counter INT,  
p\_last RECORD LIKE last\_insp.\*

DECLARE last\_cursor CURSOR FOR  
SELECT \* FROM last\_insp  
FOR UPDATE

LET counter = 0

FOREACH last\_cursor INTO p\_last.\*

IF p\_last.service = "FREIGHT SH" THEN

LET p\_last.service = "FREIGHTER"

END IF

IF p\_last.service = "FREIGHT SHIP" THEN

LET p\_last.service = "FREIGHTER"

END IF

IF p\_last.service = "PUBLIC FREIGHT" THEN

LET p\_last.service = "FREIGHTER"

END IF

IF p\_last.service = "TANK SHIP" THEN

LET p\_last.service = "TANKER"

END IF

IF p\_last.service = "PUB. TANKSHIP/BARGE" THEN

LET p\_last.service = "TANKER"

END IF

IF p\_last.service = "PASSENGER SHIP" THEN

LET p\_last.service = "PASSENGER"

END IF

LET p\_last.counter = 1

UPDATE last\_insp

SET last\_insp.\* = p\_last.\*

WHERE CURRENT OF last\_cursor

LET counter = counter + 1

IF counter mod 1000 = 0 THEN

DISPLAY counter, " rows have been updated in LAST\_INSP"

END IF  
END FOREACH  
END MAIN

## B.2.2 INFORMIX Query Files For The Risk-Based Ranking Analysis - US Flag Vessels

```
--          File: per_cas.sql
--          Author: Michael M. Delleney
-- Date of last revision: 18 AUG 1994
--          Environment: Informix Online 5.01 and I-SQL 4.11
--
-- This file calculates the number of deaths and injuries to be
-- attributed to each MSO last inspecting the vessel which had the casualty.
-- The results are grouped by vessel service and MSO and finally district.
```

```
DROP TABLE t1;
```

```
SELECT
  last_insp.dist,
  last_insp.unit,
  last_insp.service,
  last_insp.subject,
  SUM(cpct.ddead) deaths,
  SUM(cpct.dinjury) injuries
FROM
  last_insp,
  cpct
WHERE
  last_insp.subject = cpct.subject
GROUP BY
  last_insp.dist,
  last_insp.unit,
  last_insp.service,
  last_insp.subject
ORDER BY
  last_insp.dist,
  last_insp.unit,
  last_insp.service,
  last_insp.subject
INTO TEMP
  t1;
```

```
SELECT
  t1.dist,
  t1.unit[1,3],
  t1.service,
```



```
SUM(t1.deaths) deaths,  
SUM(t1.injuries) injuries  
FROM  
t1  
GROUP BY  
t1.dist,  
t1.unit[1,3],  
t1.service  
ORDER BY  
t1.dist,  
t1.unit[1,3],  
t1.service;
```

```
--          File: pol_cas.sql
--          Author: Michael M. Delleney
-- Date of last revision: 18 AUG 1994
--          Environment: Informix Online 5.01 and I-SQL 4.11
--
-- This file calculates the amount of damage to be attributed to each MSO
-- last inspecting the vessel which had the casualty. The results are
-- grouped by vessel service and MSO and finally district.
```

```
DROP TABLE t1;
```

```
SELECT
  last_insp.dist,
  last_insp.unit,
  last_insp.service,
  last_insp.subject,
  SUM(cpd.in_water_spilled + cpdt.out_water_spilled) quantity
FROM
  last_insp,
  cpdt,
  civt
WHERE
  civt.subject = cpdt.subject
  AND cpdt.subject = last_insp.subject
GROUP BY
  last_insp.dist,
  last_insp.unit,
  last_insp.service,
  last_insp.subject
ORDER BY
  last_insp.dist,
  last_insp.unit,
  last_insp.service,
  last_insp.subject
INTO TEMP
  t1;
```

```
SELECT
  t1.dist,
  t1.unit[1,3],
  t1.service,
  SUM(t1.quantity) quantity
FROM
  t1
```

GROUP BY  
t1.dist,  
t1.unit[1,3],  
t1.service  
ORDER BY  
t1.dist,  
t1.unit[1,3],  
t1.service

```
--          File: prop_cas.sql
--          Author: Michael M. Delleney
-- Date of last revision: 18 AUG 1994
--          Environment: Informix Online 5.01 and I-SQL 4.11
--
-- This file calculates the dollar amount of damage to be attributed to
-- each MSO last inspecting the vessel which had the casualty.
-- The results are grouped by vessel service and MSO and finally district.
```

```
--DROP TABLE t1;
```

```
SELECT
  last_insp.dist,
  last_insp.unit,
  last_insp.service,
  last_insp.subject,
  cirt.total_damage
FROM
  last_insp,
  civt,
  cirt
WHERE
  cirt.mccase = civt.mccase
  AND civt.subject = last_insp.subject
GROUP BY
  last_insp.dist,
  last_insp.unit,
  last_insp.service,
  last_insp.subject,
  cirt.total_damage
ORDER BY
  last_insp.dist,
  last_insp.unit,
  last_insp.service,
  last_insp.subject
INTO TEMP
  t1;
```

```
SELECT
  t1.dist,
  t1.unit[1,3],
  t1.service,
  SUM(t1.total_damage) total_damage
FROM
```

t1  
GROUP BY  
t1.dist,  
t1.unit[1,3],  
t1.service  
ORDER BY  
t1.dist,  
t1.unit[1,3],  
t1.service;

```
--          File: cas_mso.sql
--          Author: Michael M. Delleney
-- Date of last revision: 18 AUG 1994
--          Environment: Informix Online 5.01 and I-SQL 4.11
--
-- Determine from LAST_INSP how many casualties are to be counted against the
-- district/unit performing the last inspection prior to the casualty.
```

```
OUTPUT TO ../output/cas_mso.out
SELECT
  last_insp.dist      district,
  last_insp.unit[1,3] mso,
  last_insp.service   service,
  SUM(counter)        casualties
```

```
FROM
  last_insp
GROUP BY
  last_insp.dist,
  last_insp.unit[1,3],
  last_insp.service
ORDER BY
  last_insp.dist,
  last_insp.unit[1,3],
  last_insp.service
```

```
--          File: insp_mso.sql
--          Author: Michael M. Delleney
-- Date of last revision: 18 AUG 1994
--          Environment: Informix Online 5.01 and I-SQL 4.11
--
-- Determine from INSP how many inspections by district, unit, and vessel
-- service were performed on US vessels between the years 1992 and 1993
-- inclusive.
```

```
OUTPUT TO ../output/insp_mso.out
SELECT
  last_insp.dist      district,
  last_insp.unit[1,3] mso,
  insp.service        service,
  SUM(insp.counter)   inspections
FROM
  insp
GROUP BY
  last_insp.dist,
  last_insp.unit[1,3],
```

insp.service  
ORDER BY  
last\_insp.dist,  
last\_insp.unit[1,3],  
insp.service

```
--          File: us_insp.sql
--          Author: Michael M. Delleney
-- Date of last revision: 16 AUG 1994
--          Environment: Informix Online 5.01 and I-SQL 4.11
--
-- This file creates a new table in the MSMS database called INSP.
-- It brings data from the tables PORTS, IRIT, and VIDT into one place.
-- The records in the table represent all inspections performed on US
-- flagged freighters, tankers, and large passenger ships between the
-- 1990 through the most recent inspection listed in IRIT. Only the
-- CERT, HULL and REINSPECT inspection types are used, ADMIN, COC, and OTHER
-- were excluded from consideration.
```

```
DROP TABLE insp;
```

```
CREATE TABLE insp
(dist      SMALLINT,
unit      CHAR(5),
service   CHAR(19),
flag      CHAR(2),
vkey      CHAR(10),
micase    CHAR(10),
insp_typ  CHAR(10),
insp_dt   DATE,
counter   SMALLINT);
```

```
INSERT INTO insp
SELECT
  ports.dist,
  irit.unit,
  vidt.service,
  vidt.flag,
  irit.vkey,
  irit.micase,
  irit.inspect_type,
  irit.dt,
  1
FROM
  irit,
  ports,
  vidt
WHERE
  vidt.vkey = irit.vkey
  AND irit.unit = ports.unit
```



```
AND irit.inspect_type IN ("CERT", "HULL", "REINSPECT")
AND irit.dt >= "01/01/1990"
AND (vidt.service IN ("FREIGHT SHIP", "PUBLIC FREIGHT",
                     "TANK SHIP", "PUB. TANKSHIP/BARGE")
     OR (vidt.service in ("PASSENGER", "PASSENGER SHIP")
         AND vdt.num_pass >= 100))
GROUP BY
ports.dist,
irit.unit,
vidt.service,
vidt.flag,
irit.vkey,
irit.micase,
irit.inspect_type,
irit.dt;
```

```
--          File: cnt_vsl.sql
--          Author: Michael M. Delleney
-- Date of last revision: 18 AUG 1994
--          Environment: Informix Online 5.01 and I-SQL 4.11
--
-- Finds and totals the number of vessels involved in casualties and
-- provides totals for the MSO and SERVICE.
```

```
--DROP TABLE t1;
```

```
SELECT
  last_insp.dist,
  last_insp.unit,
  last_insp.service,
  SUM(last_insp.counter) num_svc
FROM
  last_insp
GROUP BY
  last_insp.dist,
  last_insp.unit,
  last_insp.service
ORDER BY
  last_insp.dist,
  last_insp.unit,
  last_insp.service
INTO TEMP
  t1;
```

```
OUTPUT TO cnt_vsl.out
SELECT
  t1.dist,
  t1.unit[1,3],
  t1.service,
  SUM(t1.num_svc) num_svc
FROM
  t1
GROUP BY
  t1.dist,
  t1.unit[1,3],
  t1.service
ORDER BY
  t1.dist,
  t1.unit[1,3],
  t1.service;
```

OUTPUT TO in\_cevt.out

```
--      File: counting.sql
--      Author: Michael M. Delleney
-- Date of last revision: 26 AUG 1994
--      Environment: Informix Online 5.01 and I-SQL 4.11
--
--
-- The purpose of the queries in this file are to determine, by MSO, MIO, and
-- service, how many of the cases involving vessel casualties are listed in
-- and out of cevt. Of those so listed as being in cevt, how many map to the
-- intervention activities outlined in "Progress Report on Project 3304.3 -
-- Research Methods to Analyze the Relationships Between the Inspection
-- Boarding Process and the Office of Marine Safety Goals: Task 3.1 -
-- Intervention Analysis, Draft TTC-1321" and how many map to "other"
-- activities.

-- Select those entries in last_insp which are also in cevt.
```

```
SELECT
  dist,
  unit[1,3],
  service,
  SUM(counter) counter
FROM
  last_insp
WHERE
  mccase IN (SELECT mccase FROM cevt)
GROUP BY
  dist,
  unit[1,3],
  service
ORDER BY
  dist,
  unit[1,3],
  service;
```

OUTPUT TO out\_cevt.out

```
-- Now we want to determine how many vessel casualties listed in last_insp are
-- not also listed in cevt.
```

```
SELECT
  dist,
  unit[1,3],
  service,
```

```

SUM(counter) counter
FROM
  last_insp
WHERE
  mccase NOT IN (SELECT mccase FROM cevt)
GROUP BY
  dist,
  unit[1,3],
  service
ORDER BY
  dist,
  unit[1,3],
  service;

```

OUTPUT TO intervene.out

```

-- Select and count those entries in last_insp which do not have an "other"
-- ("0") entry in cevt but have some other entry from the set "1"- "9".

```

```

SELECT
  dist,
  unit[1,3],
  service,
  SUM(counter) counter
FROM
  last_insp
WHERE
  mccase IN (SELECT mccase FROM cevt WHERE dtype
              IN ("1","2","3","4","5","6","7","8","9"))
GROUP BY
  dist,
  unit[1,3],
  service,
  counter
ORDER BY
  dist,
  unit[1,3],
  service,
  counter;

```

OUTPUT TO other.out

```

-- Select and count those entries in last_insp which have an "other" ("0")
-- entry in cevt. Be sure and filter out those entries that do, in fact
-- have intervention activities also listed.

```

```
SELECT
  dist,
  unit[1,3],
  service,
  SUM(counter) counter
FROM
  last_insp
WHERE
  mccase IN (SELECT mccase FROM cevt WHERE dtype IN ("0"))
  AND mccase NOT IN (SELECT mccase FROM cevt WHERE dtype
                     IN ("1","2","3","4","5","6","7","8","9"))
GROUP BY
  dist,
  unit[1,3],
  service
ORDER BY
  dist,
  unit[1,3],
  service;
```

```
--          File: int_act_1.sql
--          Author: Michael M. Delleney
-- Date of last revision: 18 AUG 1994
--          Environment: Informix Online 5.01 and I-SQL 4.11
--
-- Finds and totals the number of Cargo Handling/Pollution Control
-- intervention activities from cevt.
```

```
DROP TABLE t1;
```

```
SELECT
  last_insp.dist,
  last_insp.unit,
  last_insp.service,
  last_insp.subject,
  cevt.dtype,
  SUM(cevt.counter) counter
FROM
  last_insp,
  cevt
WHERE
  last_insp.mccase = cevt.mccase
  AND cevt.dtype = "1"
GROUP BY
  last_insp.dist,
  last_insp.unit,
  last_insp.service,
  last_insp.subject,
  cevt.dtype
ORDER BY
  last_insp.dist,
  last_insp.unit,
  last_insp.service,
  last_insp.subject,
  cevt.dtype
INTO TEMP
  t1;
OUTPUT TO int_act_1.out
SELECT
  t1.dist,
  t1.unit[1,3],
  t1.service,
  t1.dtype,
  SUM(t1.counter) counter
```

```
FROM
  t1
GROUP BY
  t1.dist,
  t1.unit[1,3],
  t1.service,
  t1.dtype
ORDER BY
  t1.dist,
  t1.unit[1,3],
  t1.service,
  t1.dtype;
```

```

--          File: int_act_2.sql
--          Author: Michael M. Delleney
-- Date of last revision: 18 AUG 1994
--          Environment: Informix Online 5.01 and I-SQL 4.11
--
-- Finds and totals the number of Steering/Navigation
-- intervention activities from cevt.

```

```

DROP TABLE t1;

```

```

SELECT
  last_insp.dist,
  last_insp.unit,
  last_insp.service,
  last_insp.subject,
  cevt.dtype,
  SUM(cevt.counter) counter
FROM
  last_insp,
  cevt
WHERE
  last_insp.mccase = cevt.mccase
  AND cevt.dtype = "2"
GROUP BY
  last_insp.dist,
  last_insp.unit,
  last_insp.service,
  last_insp.subject,
  cevt.dtype
ORDER BY
  last_insp.dist,
  last_insp.unit,
  last_insp.service,
  last_insp.subject,
  cevt.dtype
INTO TEMP
  t1;

```

```

OUTPUT TO int_act_2.out
SELECT
  t1.dist,
  t1.unit[1,3],
  t1.service,

```



```
t1.dtype,  
SUM(t1.counter) counter  
FROM  
t1  
GROUP BY  
t1.dist,  
t1.unit[1,3],  
t1.service,  
t1.dtype  
ORDER BY  
t1.dist,  
t1.unit[1,3],  
t1.service,  
t1.dtype;
```

```
--          File: int_act_3.sql
--          Author: Michael M. Delleney
-- Date of last revision: 18 AUG 1994
--          Environment: Informix Online 5.01 and I-SQL 4.11
--
-- Finds and totals the number of Document/Paperwork
-- intervention activities from cevt.
```

```
DROP TABLE t1;
```

```
SELECT
  last_insp.dist,
  last_insp.unit,
  last_insp.service,
  last_insp.subject,
  cevt.dtype,
  SUM(cevt.counter) counter
FROM
  last_insp,
  cevt
WHERE
  last_insp.mccase = cevt.mccase
  AND cevt.dtype = "3"
GROUP BY
  last_insp.dist,
  last_insp.unit,
  last_insp.service,
  last_insp.subject,
  cevt.dtype
ORDER BY
  last_insp.dist,
  last_insp.unit,
  last_insp.service,
  last_insp.subject,
  cevt.dtype
INTO TEMP
  t1;
```

```
OUTPUT TO int_act_3.out
SELECT
  t1.dist,
  t1.unit[1,3],
  t1.service,
```

```
t1.dtype,  
SUM(t1.counter) counter  
FROM  
  t1  
GROUP BY  
  t1.dist,  
  t1.unit[1,3],  
  t1.service,  
  t1.dtype  
ORDER BY  
  t1.dist,  
  t1.unit[1,3],  
  t1.service,  
  t1.dtype;
```

-- File: int\_act\_4.sql  
-- Author: Michael M. Delleney  
-- Date of last revision: 18 AUG 1994  
-- Environment: Informix Online 5.01 and I-SQL 4.11  
--  
-- Finds and totals the number of Drills/Human Factors  
-- intervention activities from cevt.

DROP TABLE t1;

SELECT  
last\_insp.dist,  
last\_insp.unit,  
last\_insp.service,  
last\_insp.subject,  
cevt.dtype,  
SUM(cevt.counter) counter  
FROM  
last\_insp,  
cevt  
WHERE  
last\_insp.mccase = cevt.mccase  
AND cevt.dtype = "4"  
GROUP BY  
last\_insp.dist,  
last\_insp.unit,  
last\_insp.service,  
last\_insp.subject,  
cevt.dtype  
ORDER BY  
last\_insp.dist,  
last\_insp.unit,  
last\_insp.service,  
last\_insp.subject,  
cevt.dtype  
INTO TEMP  
t1;

OUTPUT TO int\_act\_4.out  
SELECT  
t1.dist,  
t1.unit[1,3],  
t1.service,

```
t1.dtype,  
SUM(t1.counter) counter  
FROM  
t1  
GROUP BY  
t1.dist,  
t1.unit[1,3],  
t1.service,  
t1.dtype  
ORDER BY  
t1.dist,  
t1.unit[1,3],  
t1.service,  
t1.dtype;
```

```
--      File: int_act_5.sql
--      Author: Michael M. Delleney
-- Date of last revision: 18 AUG 1994
--      Environment: Informix Online 5.01 and I-SQL 4.11
--
-- Finds and totals the number of Auxiliary Systems
-- intervention activities from cevt.
```

```
DROP TABLE t1;
```

```
SELECT
  last_insp.dist,
  last_insp.unit,
  last_insp.service,
  last_insp.subject,
  cevt.dtype,
  SUM(cevt.counter) counter
FROM
  last_insp,
  cevt
WHERE
  last_insp.mccase = cevt.mccase
  AND cevt.dtype = "5"
GROUP BY
  last_insp.dist,
  last_insp.unit,
  last_insp.service,
  last_insp.subject,
  cevt.dtype
ORDER BY
  last_insp.dist,
  last_insp.unit,
  last_insp.service,
  last_insp.subject,
  cevt.dtype
INTO TEMP
  t1;
```

```
OUTPUT TO int_act_5.out
SELECT
  t1.dist,
  t1.unit[1,3],
  t1.service,
```

```
    t1.dtype,  
    SUM(t1.counter) counter  
FROM  
    t1  
GROUP BY  
    t1.dist,  
    t1.unit[1,3],  
    t1.service,  
    t1.dtype  
ORDER BY  
    t1.dist,  
    t1.unit[1,3],  
    t1.service,  
    t1.dtype;
```

```
--          File: int_act_6.sql
--          Author: Michael M. Delleney
-- Date of last revision: 18 AUG 1994
--          Environment: Informix Online 5.01 and I-SQL 4.11
--
-- Finds and totals the number of Power Plant intervention activities from cevt.
```

```
DROP TABLE t1;
```

```
SELECT
  last_insp.dist,
  last_insp.unit,
  last_insp.service,
  last_insp.subject,
  cevt.dtype,
  SUM(cevt.counter) counter
FROM
  last_insp,
  cevt
WHERE
  last_insp.mccase = cevt.mccase
  AND cevt.dtype = "6"
GROUP BY
  last_insp.dist,
  last_insp.unit,
  last_insp.service,
  last_insp.subject,
  cevt.dtype
ORDER BY
  last_insp.dist,
  last_insp.unit,
  last_insp.service,
  last_insp.subject,
  cevt.dtype
INTO TEMP
  t1;
```

```
OUTPUT TO int_act_6.out
```

```
SELECT
  t1.dist,
  t1.unit[1,3],
  t1.service,
  t1.dtype,
```



```
SUM(t1.counter) counter
FROM
  t1
GROUP BY
  t1.dist,
  t1.unit[1,3],
  t1.service,
  t1.dtype
ORDER BY
  t1.dist,
  t1.unit[1,3],
  t1.service,
  t1.dtype;
```

-- File: int\_act\_7.sql  
-- Author: Michael M. Delleney  
-- Date of last revision: 18 AUG 1994  
-- Environment: Informix Online 5.01 and I-SQL 4.11  
--  
-- Finds and totals the number of Fire Fighting and Prevention  
-- intervention activities from cevt.

DROP TABLE t1;

SELECT  
last\_insp.dist,  
last\_insp.unit,  
last\_insp.service,  
last\_insp.subject,  
cevt.dtype,  
SUM(cevt.counter) counter  
FROM  
last\_insp,  
cevt  
WHERE  
last\_insp.mccase = cevt.mccase  
AND cevt.dtype = "7"  
GROUP BY  
last\_insp.dist,  
last\_insp.unit,  
last\_insp.service,  
last\_insp.subject,  
cevt.dtype  
ORDER BY  
last\_insp.dist,  
last\_insp.unit,  
last\_insp.service,  
last\_insp.subject,  
cevt.dtype  
INTO TEMP  
t1;

OUTPUT TO int\_act\_7.out  
SELECT  
t1.dist,  
t1.unit[1,3],  
t1.service,

```
    t1.dtype,  
    SUM(t1.counter) counter  
FROM  
    t1  
GROUP BY  
    t1.dist,  
    t1.unit[1,3],  
    t1.service,  
    t1.dtype  
ORDER BY  
    t1.dist,  
    t1.unit[1,3],  
    t1.service,  
    t1.dtype;
```

```
--          File: int_act_8.sql
--          Author: Michael M. Delleney
-- Date of last revision: 18 AUG 1994
--          Environment: Informix Online 5.01 and I-SQL 4.11
--
-- Finds and totals the number of HULL intervention activities from cevt.
```

```
DROP TABLE t1;
```

```
SELECT
  last_insp.dist,
  last_insp.unit,
  last_insp.service,
  last_insp.subject,
  cevt.dtype,
  SUM(cevt.counter) counter
FROM
  last_insp,
  cevt
WHERE
  last_insp.mccase = cevt.mccase
  AND cevt.dtype = "8"
GROUP BY
  last_insp.dist,
  last_insp.unit,
  last_insp.service,
  last_insp.subject,
  cevt.dtype
ORDER BY
  last_insp.dist,
  last_insp.unit,
  last_insp.service,
  last_insp.subject,
  cevt.dtype
INTO TEMP
  t1;
```

```
OUTPUT TO int_act_8.out
SELECT
  t1.dist,
  t1.unit[1,3],
  t1.service,
  t1.dtype,
  SUM(t1.counter) counter
```

```
FROM
  t1
GROUP BY
  t1.dist,
  t1.unit[1,3],
  t1.service,
  t1.dtype
ORDER BY
  t1.dist,
  t1.unit[1,3],
  t1.service,
  t1.dtype;
```

```

--          File: int_act_9.sql
--          Author: Michael M. Delleney
-- Date of last revision: 18 AUG 1994
--          Environment: Informix Online 5.01 and I-SQL 4.11
--
-- Finds and totals the number of Life Saving
-- intervention activities from cevt.

```

```

DROP TABLE t1;

```

```

SELECT
  last_insp.dist,
  last_insp.unit,
  last_insp.service,
  last_insp.subject,
  cevt.dtype,
  SUM(cevt.counter) counter
FROM
  last_insp,
  cevt
WHERE
  last_insp.mccase = cevt.mccase
  AND cevt.dtype = "9"
GROUP BY
  last_insp.dist,
  last_insp.unit,
  last_insp.service,
  last_insp.subject,
  cevt.dtype
ORDER BY
  last_insp.dist,
  last_insp.unit,
  last_insp.service,
  last_insp.subject,
  cevt.dtype
INTO TEMP
  t1;

```

```

OUTPUT TO int_act_9.out
SELECT
  t1.dist,
  t1.unit[1,3],
  t1.service,
  t1.dtype,

```

```
SUM(t1.counter) counter
FROM
  t1
GROUP BY
  t1.dist,
  t1.unit[1,3],
  t1.service,
  t1.dtype
ORDER BY
  t1.dist,
  t1.unit[1,3],
  t1.service,
  t1.dtype;
```

```

--          File: last_insp.sql
--          Author: Michael M. Delleney
-- Date of last revision: 18 AUG 1994
--          Environment: Informix Online 5.01 and I-SQL 4.11
--
-- This file creates a new table in the MSMS database called LAST_INSP.
-- It determines which USCG activity performed the last inspection on a
-- vessel prior to a casualty listed in CIRT and CIVT.
-- The tables used are INSP, CIVT, and CIRT.
-- Three temporary tables are created TINSPI, TINSPI_2, and TINSPI_3.
-- The table INSP must be present in MSMS in order for LAST_INSP to be
-- created. If it is not then run the SQL file INSP.SQL contain in the same
-- directory as this file.
--
-- See each SELECT statement for information concerning what it does.
--
-- These are here depending on whether the table was created during the
-- current invocation of ISQL or not.

--DROP TABLE tinspi;
--DROP TABLE tinspi_2;
--DROP TABLE tinspi_3;
DROP TABLE last_insp;

CREATE TABLE last_insp
(dist          SMALLINT,
 unit         CHAR(5),
 service      CHAR(19),
 vkey         CHAR(10),
 micase       CHAR(10),
 mccase       CHAR(10),
 subject      CHAR(10),
 insp_dt      DATE,
 incident_dt  DATE,
 counter      SMALLINT);

-- This select statement takes all vessel incidents occurring in 1992 and
-- 1993 and extracts all records where the vessel was inspected on or before
-- the casualty date and places the results in the temporary table
-- TINSPI.

SELECT
  insp.unit,
  insp.dist,

```



```

    civt.service,
    insp.vkey,
    insp.micase,
    civt.mccase,
    civt.subject,
    insp.insp_dt,
    cirt.incident_dt
FROM
    cirt,
    civt,
    insp
WHERE
    cirt.mccase = civt.mccase
    AND civt.vkey = insp.vkey
    AND cirt.incident_dt BETWEEN "01/01/1992" AND "12/31/1993"
    AND insp.insp_dt <= cirt.incident_dt
    AND civt.flag = "US"
GROUP BY
    insp.dist,
    insp.unit,
    civt.service,
    insp.vkey,
    insp.micase,
    civt.mccase,
    civt.subject,
    insp.insp_dt,
    cirt.incident_dt
ORDER BY
    insp.dist,
    insp.unit,
    civt.service,
    insp.vkey,
    insp.micase,
    civt.mccase,
    civt.subject,
    cirt.incident_dt
INTO TEMP
    tinsp;

-- This SELECT statement simply extracts the most recent inspection date
-- for a given vessel in a particular accident and places it into temporary
-- table TINSP_2

SELECT

```

```

    tinsp.subject,
    MAX(tinsp.insp_dt) insp_dt
FROM
    tinsp
GROUP BY
    tinsp.subject
INTO TEMP
    tinsp_2;

```

```

-- If there are more than one inspection on a particular date for a given
-- vessel in a given accident, then the record with the largest case number
-- is selected on the assumption that it is the most recent inspection.
-- TINSP_3 now contains only one inspection for a particular ship
-- involved in a particular casualty along with the date of its last
-- inspection.

```

```

SELECT
    tinsp.subject,
    MAX(tinsp.micase) micase,
    tinsp.insp_dt
FROM
    tinsp,
    tinsp_2
WHERE
    tinsp.subject = tinsp_2.subject
    AND tinsp.insp_dt = tinsp_2.insp_dt
GROUP BY
    tinsp.subject,
    tinsp.insp_dt
INTO TEMP
    tinsp_3;

```

```

-- From TINSP which contains all of the columns of interest (and all
-- inspections performed before the casualty) and TINSP_3 which contains the
-- SUBJECT (particular ship for a particular casualty), MICASE (inspection
-- case number), and INSP_DT (date of the last inspection prior to the
-- casualty) the table LAST_INSP is generated by comparing the two and
-- taking only those records occurring in both tables.

```

```

INSERT INTO last_insp
    (dist,
    unit,
    service,
    vkey,

```

```
micase,  
mccase,  
subject,  
insp_dt,  
incident_dt)  
SELECT  
  tinsp.dist,  
  tinsp.unit,  
  tinsp.service,  
  tinsp.vkey,  
  tinsp.micase,  
  tinsp.mccase,  
  tinsp.subject,  
  tinsp.insp_dt,  
  tinsp.incident_dt  
FROM  
  tinsp,  
  tinsp_2,  
  tinsp_3  
WHERE  
  tinsp.subject = tinsp_3.subject  
  AND tinsp.micase = tinsp_3.micase  
  AND tinsp.insp_dt = tinsp_3.insp_dt  
GROUP BY  
  tinsp.dist,  
  tinsp.unit,  
  tinsp.service,  
  tinsp.vkey,  
  tinsp.micase,  
  tinsp.mccase,  
  tinsp.subject,  
  tinsp.insp_dt,  
  tinsp.incident_dt;
```

```
--          File: per_cas.sql
--          Author: Michael M. Delleney
-- Date of last revision: 18 AUG 1994
--          Environment: Informix Online 5.01 and I-SQL 4.11
--
-- This file calculates the number of deaths and injuries to be
-- attributed to each MSO last inspecting the vessel which had the casualty.
-- The results are grouped by vessel service and MSO and finally district.
```

```
DROP TABLE t1;
```

```
SELECT
  last_insp.dist,
  last_insp.unit,
  last_insp.service,
  last_insp.subject,
  SUM(cpct.ddead) deaths,
  SUM(cpct.dinjury) injuries
FROM
  last_insp,
  cpct
WHERE
  last_insp.subject = cpct.subject
GROUP BY
  last_insp.dist,
  last_insp.unit,
  last_insp.service,
  last_insp.subject
ORDER BY
  last_insp.dist,
  last_insp.unit,
  last_insp.service,
  last_insp.subject
INTO TEMP
  t1;
```

```
OUTPUT TO output/per_cas.out
SELECT
  t1.dist,
  t1.unit[1,3],
  t1.service,
  SUM(t1.deaths) deaths,
  SUM(t1.injuries) injuries
FROM
```

t1  
GROUP BY  
t1.dist,  
t1.unit[1,3],  
t1.service  
ORDER BY  
t1.dist,  
t1.unit[1,3],  
t1.service;

```

--          File: pol_cas.sql
--          Author: Michael M. Delleney
-- Date of last revision: 18 AUG 1994
--          Environment: Informix Online 5.01 and I-SQL 4.11
--
-- This file calculates the amount of damage to be attributed to each MSO
-- last inspecting the vessel which had the casualty. The results are
-- grouped by vessel service and MSO and finally district.

```

```

DROP TABLE t1;

```

```

SELECT
  last_insp.dist,
  last_insp.unit,
  last_insp.service,
  last_insp.subject,
  SUM(cpdt.in_water_spilled + cpdt.out_water_spilled) quantity
FROM
  last_insp,
  cpdt,
  civt
WHERE
  civt.subject = cpdt.subject
  AND cpdt.subject = last_insp.subject
GROUP BY
  last_insp.dist,
  last_insp.unit,
  last_insp.service,
  last_insp.subject
ORDER BY
  last_insp.dist,
  last_insp.unit,
  last_insp.service,
  last_insp.subject
INTO TEMP
  t1;

```

```

OUTPUT TO output/pol_cas.out
SELECT
  t1.dist,
  t1.unit[1,3],
  t1.service,

```

```
SUM(t1.quantity) quantity
FROM
  t1
GROUP BY
  t1.dist,
  t1.unit[1,3],
  t1.service
ORDER BY
  t1.dist,
  t1.unit[1,3],
  t1.service;
```

```

--          File: prop_cas.sql
--          Author: Michael M. Delleney
-- Date of last revision: 18 AUG 1994
--          Environment: Informix Online 5.01 and I-SQL 4.11
--
-- This file calculates the dollar amount of damage to be attributed to
-- each MSO last inspecting the vessel which had the casualty.
-- The results are grouped by vessel service and MSO and finally district.

```

```

DROP TABLE t1;

```

```

SELECT
  last_insp.dist,
  last_insp.unit,
  last_insp.service,
  last_insp.subject,
  cirt.total_damage
FROM
  last_insp,
  civt,
  cirt
WHERE
  cirt.mccase = civt.mccase
  AND civt.subject = last_insp.subject
GROUP BY
  last_insp.dist,
  last_insp.unit,
  last_insp.service,
  last_insp.subject,
  cirt.total_damage
ORDER BY
  last_insp.dist,
  last_insp.unit,
  last_insp.service,
  last_insp.subject
INTO TEMP
  t1;

```

```

OUTPUT TO output/prop_cas.out
SELECT
  t1.dist,
  t1.unit[1,3],
  t1.service,

```



```
SUM(t1.total_damage) total_damage
FROM
  t1
GROUP BY
  t1.dist,
  t1.unit[1,3],
  t1.service
ORDER BY
  t1.dist,
  t1.unit[1,3],
  t1.service;
```

```
OUTPUT TO output/cas_mso.out
```

```
--          File: cas_mso.sql
--          Author: Michael M. Delleney
-- Date of last revision: 18 AUG 1994
--          Environment: Informix Online 5.01 and I-SQL 4.11
--
-- Determine from LAST_INSP how many casualties are to be counted against the
-- district/unit performing the last inspection prior to the casualty.
```

```
SELECT
  last_insp.dist      district,
  last_insp.unit[1,3] mso,
  last_insp.service   service,
  SUM(counter)        casualties
FROM
  last_insp
GROUP BY
  last_insp.dist,
  last_insp.unit[1,3],
  last_insp.service
ORDER BY
  last_insp.dist,
  last_insp.unit[1,3],
  last_insp.service;
```

```
OUTPUT TO output/insp_mso.out
--          File: insp_mso.sql
--          Author: Michael M. Delleney
-- Date of last revision: 18 AUG 1994
--          Environment: Informix Online 5.01 and I-SQL 4.11
--
-- Determine from INSP how many inspections by district, unit, and vessel
-- service were performed on US vessels between the years 1992 and 1993
-- inclusive.
```

```
SELECT
  insp.dist      district,
  insp.unit[1,3] mso,
  insp.service   service,
  SUM(insp.counter) inspections
FROM
  insp
GROUP BY
  insp.dist,
  insp.unit[1,3],
```

insp.service  
ORDER BY  
insp.dist,  
insp.unit[1,3],  
insp.service;

```
--      File: cnt_vsl.sql
--      Author: Michael M. Delleney
-- Date of last revision: 18 AUG 1994
--      Environment: Informix Online 5.01 and I-SQL 4.11
--
-- Finds and totals the number of vessels involved in casualties and
-- provides totals for the MSO and SERVICE.
```

```
DROP TABLE t1;
```

```
SELECT
  last_insp.dist,
  last_insp.unit,
  last_insp.service,
  SUM(last_insp.counter) num_svc
FROM
  last_insp
GROUP BY
  last_insp.dist,
  last_insp.unit,
  last_insp.service
ORDER BY
  last_insp.dist,
  last_insp.unit,
  last_insp.service
INTO TEMP
  t1;
```

```
OUTPUT TO output/cnt_vsl.out
SELECT
  t1.dist,
  t1.unit[1,3],
  t1.service,
  SUM(t1.num_svc) num_svc
FROM
  t1
GROUP BY
  t1.dist,
  t1.unit[1,3],
  t1.service
ORDER BY
  t1.dist,
  t1.unit[1,3],
  t1.service;
```

OUTPUT TO output/in\_cevt.out

```

--          File: counting.sql
--          Author: Michael M. Delleney
-- Date of last revision: 26 AUG 1994
--          Environment: Informix Online 5.01 and I-SQL 4.11
--
--
-- The purpose of the queries in this file are to determine, by MSO, MIO, and
-- service, how many of the cases involving vessel casualties are listed in
-- and out of cevt. Of those so listed as being in cevt, how many map to the
-- intervention activities outlined in "Progress Report on Project 3304.3 -
-- Research Methods to Analyze the Relationships Between the Inspection
-- Boarding Process and the Office of Marine Safety Goals: Task 3.1 -
-- Intervention Analysis, Draft TTC-1321" and how many map to "other"
-- activities.

-- Select those entries in last_insp which are also in cevt.

SELECT
    dist,
    unit[1,3],
    service,
    SUM(counter) counter
FROM
    last_insp
WHERE
    mccase IN (SELECT mccase FROM cevt)
GROUP BY
    dist,
    unit[1,3],
    service
ORDER BY
    dist,
    unit[1,3],
    service;

OUTPUT TO output/out_cevt.out
-- Now we want to determine how many vessel casualties listed in last_insp are
-- not also listed in cevt.

SELECT
    dist,
    unit[1,3],
    service,

```

```

SUM(counter) counter
FROM
last_insp
WHERE
mccase NOT IN (SELECT mccase FROM cevt)
GROUP BY
dist,
unit[1,3],
service
ORDER BY
dist,
unit[1,3],
service;

```

OUTPUT TO output/intervene.out

```

-- Select and count those entries in last_insp which do not have an "other"
-- ("0") entry in cevt but have some other entry from the set "1"-"9".

```

```

SELECT
dist,
unit[1,3],
service,
SUM(counter) counter
FROM
last_insp
WHERE
mccase IN (SELECT mccase FROM cevt WHERE dtype
IN ("1","2","3","4","5","6","7","8","9"))
GROUP BY
dist,
unit[1,3],
service,
counter
ORDER BY
dist,
unit[1,3],
service,
counter;

```

OUTPUT TO output/other.out

```

-- Select and count those entries in last_insp which have an "other" ("0")
-- entry in cevt. Be sure and filter out those entries that do, in fact
-- have intervention activities also listed.

```

```
SELECT
  dist,
  unit[1,3],
  service,
  SUM(counter) counter
FROM
  last_insp
WHERE
  mccase IN (SELECT mccase FROM cevt WHERE dtype IN ("0"))
  AND mccase NOT IN (SELECT mccase FROM cevt WHERE dtype
                     IN ("1","2","3","4","5","6","7","8","9"))
GROUP BY
  dist,
  unit[1,3],
  service
ORDER BY
  dist,
  unit[1,3],
  service;
```



```
--          File: int_act_1.sql
--          Author: Michael M. Delleney
-- Date of last revision: 18 AUG 1994
--          Environment: Informix Online 5.01 and I-SQL 4.11
--
-- Finds and totals the number of Cargo Handling/Pollution Control
-- intervention activities from cevt.
```

```
DROP TABLE t1;
```

```
SELECT
  last_insp.dist,
  last_insp.unit,
  last_insp.service,
  last_insp.subject,
  cevt.dtype,
  SUM(cevt.counter) counter
FROM
  last_insp,
  cevt
WHERE
  last_insp.mccase = cevt.mccase
  AND cevt.dtype = "1"
GROUP BY
  last_insp.dist,
  last_insp.unit,
  last_insp.service,
  last_insp.subject,
  cevt.dtype
ORDER BY
  last_insp.dist,
  last_insp.unit,
  last_insp.service,
  last_insp.subject,
  cevt.dtype
INTO TEMP
  t1;
OUTPUT TO output/int_act_1.out
SELECT
  t1.dist,
  t1.unit[1,3],
  t1.service,
  t1.dtype,
  SUM(t1.counter) counter
```

FROM

t1

GROUP BY

t1.dist,

t1.unit[1,3],

t1.service,

t1.dtype

ORDER BY

t1.dist,

t1.unit[1,3],

t1.service,

t1.dtype;

```
--          File: int_act_2.sql
--          Author: Michael M. Delleney
-- Date of last revision: 18 AUG 1994
--          Environment: Informix Online 5.01 and I-SQL 4.11
--
-- Finds and totals the number of Steering/Navigation
-- intervention activities from cevt.
```

```
DROP TABLE t1;
```

```
SELECT
  last_insp.dist,
  last_insp.unit,
  last_insp.service,
  last_insp.subject,
  cevt.dtype,
  SUM(cevt.counter) counter
FROM
  last_insp,
  cevt
WHERE
  last_insp.mccase = cevt.mccase
  AND cevt.dtype = "2"
GROUP BY
  last_insp.dist,
  last_insp.unit,
  last_insp.service,
  last_insp.subject,
  cevt.dtype
ORDER BY
  last_insp.dist,
  last_insp.unit,
  last_insp.service,
  last_insp.subject,
  cevt.dtype
INTO TEMP
  t1;
```

```
OUTPUT TO output/int_act_2.out
SELECT
  t1.dist,
  t1.unit[1,3],
  t1.service,
  t1.dtype,
```

```
SUM(t1.counter) counter
FROM
  t1
GROUP BY
  t1.dist,
  t1.unit[1,3],
  t1.service,
  t1.dtype
ORDER BY
  t1.dist,
  t1.unit[1,3],
  t1.service,
  t1.dtype;
```

```
--          File: int_act_3.sql
--          Author: Michael M. Delleney
-- Date of last revision: 18 AUG 1994
--          Environment: Informix Online 5.01 and I-SQL 4.11
--
-- Finds and totals the number of Document/Paperwork
-- intervention activities from cevt.
```

```
DROP TABLE t1;
```

```
SELECT
  last_insp.dist,
  last_insp.unit,
  last_insp.service,
  last_insp.subject,
  cevt.dtype,
  SUM(cevt.counter) counter
FROM
  last_insp,
  cevt
WHERE
  last_insp.mccase = cevt.mccase
  AND cevt.dtype = "3"
GROUP BY
  last_insp.dist,
  last_insp.unit,
  last_insp.service,
  last_insp.subject,
  cevt.dtype
ORDER BY
  last_insp.dist,
  last_insp.unit,
  last_insp.service,
  last_insp.subject,
  cevt.dtype
INTO TEMP
t1;
```

```
OUTPUT TO output/int_act_3.out
SELECT
  t1.dist,
  t1.unit[1,3],
  t1.service,
  t1.dtype,
```

```
SUM(t1.counter) counter
FROM
  t1
GROUP BY
  t1.dist,
  t1.unit[1,3],
  t1.service,
  t1.dtype
ORDER BY
  t1.dist,
  t1.unit[1,3],
  t1.service,
  t1.dtype;
```

```
--          File: int_act_4.sql
--          Author: Michael M. Delleney
-- Date of last revision: 18 AUG 1994
--          Environment: Informix Online 5.01 and I-SQL 4.11
--
-- Finds and totals the number of Drills/Human Factors
-- intervention activities from cevt.
```

```
DROP TABLE t1;
```

```
SELECT
  last_insp.dist,
  last_insp.unit,
  last_insp.service,
  last_insp.subject,
  cevt.dtype,
  SUM(cevt.counter) counter
FROM
  last_insp,
  cevt
WHERE
  last_insp.mccase = cevt.mccase
  AND cevt.dtype = "4"
GROUP BY
  last_insp.dist,
  last_insp.unit,
  last_insp.service,
  last_insp.subject,
  cevt.dtype
ORDER BY
  last_insp.dist,
  last_insp.unit,
  last_insp.service,
  last_insp.subject,
  cevt.dtype
INTO TEMP
  t1;
```

```
OUTPUT TO output/int_act_4.out
SELECT
  t1.dist,
  t1.unit[1,3],
  t1.service,
  t1.dtype,
```

```
SUM(t1.counter) counter
FROM
  t1
GROUP BY
  t1.dist,
  t1.unit[1,3],
  t1.service,
  t1.dtype
ORDER BY
  t1.dist,
  t1.unit[1,3],
  t1.service,
  t1.dtype;
```



```
--          File: int_act_5.sql
--          Author: Michael M. Delleney
-- Date of last revision: 18 AUG 1994
--          Environment: Informix Online 5.01 and I-SQL 4.11
--
-- Finds and totals the number of Auxiliary Systems
-- intervention activities from cevt.
```

```
DROP TABLE t1;
```

```
SELECT
  last_insp.dist,
  last_insp.unit,
  last_insp.service,
  last_insp.subject,
  cevt.dtype,
  SUM(cevt.counter) counter
FROM
  last_insp,
  cevt
WHERE
  last_insp.mccase = cevt.mccase
  AND cevt.dtype = "5"
GROUP BY
  last_insp.dist,
  last_insp.unit,
  last_insp.service,
  last_insp.subject,
  cevt.dtype
ORDER BY
  last_insp.dist,
  last_insp.unit,
  last_insp.service,
  last_insp.subject,
  cevt.dtype
INTO TEMP
  t1;
```

```
OUTPUT TO output/int_act_5.out
SELECT
  t1.dist,
  t1.unit[1,3],
  t1.service,
  t1.dtype,
```

```
SUM(t1.counter) counter
FROM
  t1
GROUP BY
  t1.dist,
  t1.unit[1,3],
  t1.service,
  t1.dtype
ORDER BY
  t1.dist,
  t1.unit[1,3],
  t1.service,
  t1.dtype;
```

```

--          File: int_act_6.sql
--          Author: Michael M. Delleney
-- Date of last revision: 18 AUG 1994
--          Environment: Informix Online 5.01 and I-SQL 4.11
--
-- Finds and totals the number of Power Plant intervention activities from cevt.

```

```

DROP TABLE t1;

```

```

SELECT
  last_insp.dist,
  last_insp.unit,
  last_insp.service,
  last_insp.subject,
  cevt.dtype,
  SUM(cevt.counter) counter
FROM
  last_insp,
  cevt
WHERE
  last_insp.mccase = cevt.mccase
  AND cevt.dtype = "6"
GROUP BY
  last_insp.dist,
  last_insp.unit,
  last_insp.service,
  last_insp.subject,
  cevt.dtype
ORDER BY
  last_insp.dist,
  last_insp.unit,
  last_insp.service,
  last_insp.subject,
  cevt.dtype
INTO TEMP
  t1;

```

```

OUTPUT TO output/int_act_6.out
SELECT
  t1.dist,
  t1.unit[1,3],
  t1.service,
  t1.dtype,
  SUM(t1.counter) counter

```

FROM  
t1  
GROUP BY  
t1.dist,  
t1.unit[1,3],  
t1.service,  
t1.dtype  
ORDER BY  
t1.dist,  
t1.unit[1,3],  
t1.service,  
t1.dtype;

```
--          File: int_act_7.sql
--          Author: Michael M. Delleney
-- Date of last revision: 18 AUG 1994
--          Environment: Informix Online 5.01 and I-SQL 4.11
--
-- Finds and totals the number of Fire Fighting and Prevention
-- intervention activities from cevt.
```

```
DROP TABLE t1;
```

```
SELECT
  last_insp.dist,
  last_insp.unit,
  last_insp.service,
  last_insp.subject,
  cevt.dtype,
  SUM(cevt.counter) counter
FROM
  last_insp,
  cevt
WHERE
  last_insp.mccase = cevt.mccase
  AND cevt.dtype = "7"
GROUP BY
  last_insp.dist,
  last_insp.unit,
  last_insp.service,
  last_insp.subject,
  cevt.dtype
ORDER BY
  last_insp.dist,
  last_insp.unit,
  last_insp.service,
  last_insp.subject,
  cevt.dtype
INTO TEMP
  t1;
```

```
OUTPUT TO output/int_act_7.out
SELECT
  t1.dist,
  t1.unit[1,3],
  t1.service,
  t1.dtype,
```

```
SUM(t1.counter) counter
FROM
  t1
GROUP BY
  t1.dist,
  t1.unit[1,3],
  t1.service,
  t1.dtype
ORDER BY
  t1.dist,
  t1.unit[1,3],
  t1.service,
  t1.dtype;
```

```
--          File: int_act_8.sql
--          Author: Michael M. Delleney
-- Date of last revision: 18 AUG 1994
--          Environment: Informix Online 5.01 and I-SQL 4.11
--
-- Finds and totals the number of HULL intervention activities from cevt.
```

```
DROP TABLE t1;
```

```
SELECT
  last_insp.dist,
  last_insp.unit,
  last_insp.service,
  last_insp.subject,
  cevt.dtype,
  SUM(cevt.counter) counter
FROM
  last_insp,
  cevt
WHERE
  last_insp.mccase = cevt.mccase
  AND cevt.dtype = "8"
GROUP BY
  last_insp.dist,
  last_insp.unit,
  last_insp.service,
  last_insp.subject,
  cevt.dtype
ORDER BY
  last_insp.dist,
  last_insp.unit,
  last_insp.service,
  last_insp.subject,
  cevt.dtype
INTO TEMP
  t1;
```

```
OUTPUT TO output/int_act_8.out
SELECT
  t1.dist,
  t1.unit[1,3],
  t1.service,
  t1.dtype,
  SUM(t1.counter) counter
```

FROM  
t1  
GROUP BY  
t1.dist,  
t1.unit[1,3],  
t1.service,  
t1.dtype  
ORDER BY  
t1.dist,  
t1.unit[1,3],  
t1.service,  
t1.dtype;



```
--          File: int_act_9.sql
--          Author: Michael M. Delleney
-- Date of last revision: 18 AUG 1994
--          Environment: Informix Online 5.01 and I-SQL 4.11
--
-- Finds and totals the number of Life Saving
-- intervention activities from cevt.
```

```
DROP TABLE t1;
```

```
SELECT
  last_insp.dist,
  last_insp.unit,
  last_insp.service,
  last_insp.subject,
  cevt.dtype,
  SUM(cevt.counter) counter
FROM
  last_insp,
  cevt
WHERE
  last_insp.mccase = cevt.mccase
  AND cevt.dtype = "9"
GROUP BY
  last_insp.dist,
  last_insp.unit,
  last_insp.service,
  last_insp.subject,
  cevt.dtype
ORDER BY
  last_insp.dist,
  last_insp.unit,
  last_insp.service,
  last_insp.subject,
  cevt.dtype
INTO TEMP
  t1;
```

```
OUTPUT TO output/int_act_9.out
SELECT
  t1.dist,
  t1.unit[1,3],
  t1.service,
  t1.dtype,
```

```
SUM(t1.counter) counter
FROM
  t1
GROUP BY
  t1.dist,
  t1.unit[1,3],
  t1.service,
  t1.dtype
ORDER BY
  t1.dist,
  t1.unit[1,3],
  t1.service,
  t1.dtype;
```

#### B.2.4 INFORMIX Query Files For The Risk-Based Ranking Analysis - Foreign Flag Vessels

```
--          File: per_cas.sql
--          Author: Michael M. Delleney
-- Date of last revision: 18 AUG 1994
--          Environment: Informix Online 5.01 and I-SQL 4.11
--
-- This file calculates the number of deaths and injuries to be
-- attributed to each MSO last inspecting the vessel which had the casualty.
-- The results are grouped by vessel service and MSO and finally district.
```

```
DROP TABLE t1;
```

```
SELECT
  last_insp.dist,
  last_insp.unit,
  last_insp.service,
  last_insp.subject,
  SUM(cpct.ddead) deaths,
  SUM(cpct.dinjury) injuries
FROM
  last_insp,
  cpct
WHERE
  last_insp.subject = cpct.subject
GROUP BY
  last_insp.dist,
  last_insp.unit,
  last_insp.service,
  last_insp.subject
ORDER BY
  last_insp.dist,
  last_insp.unit,
  last_insp.service,
  last_insp.subject
INTO TEMP
  t1;
```

```
OUTPUT TO output/per_cas.out
SELECT
  t1.dist,
  t1.unit[1,3],
  t1.service,
  SUM(t1.deaths) deaths,
```

```
SUM(t1.injuries) injuries
FROM
  t1
GROUP BY
  t1.dist,
  t1.unit[1,3],
  t1.service
ORDER BY
  t1.dist,
  t1.unit[1,3],
  t1.service;
```

```
--          File: pol_cas.sql
--          Author: Michael M. Delleney
-- Date of last revision: 18 AUG 1994
--          Environment: Informix Online 5.01 and I-SQL 4.11
--
-- This file calculates the amount of damage to be attributed to each MSO
-- last inspecting the vessel which had the casualty. The results are
-- grouped by vessel service and MSO and finally district.
```

```
DROP TABLE t1;
```

```
SELECT
  last_insp.dist,
  last_insp.unit,
  last_insp.service,
  last_insp.subject,
  SUM(cpd.in_water_spilled + cpdt.out_water_spilled) quantity
FROM
  last_insp,
  cpdt,
  civt
WHERE
  civt.subject = cpdt.subject
  AND cpdt.subject = last_insp.subject
GROUP BY
  last_insp.dist,
  last_insp.unit,
  last_insp.service,
  last_insp.subject
ORDER BY
  last_insp.dist,
  last_insp.unit,
  last_insp.service,
  last_insp.subject
INTO TEMP
  t1;
```

```
OUTPUT TO output/pol_cas.out
```

```
SELECT
  t1.dist,
  t1.unit[1,3],
  t1.service,
  SUM(t1.quantity) quantity
FROM
```

t1  
GROUP BY  
t1.dist,  
t1.unit[1,3],  
t1.service  
ORDER BY  
t1.dist,  
t1.unit[1,3],  
t1.service

```
--          File: prop_cas.sql
--          Author: Michael M. Delleney
-- Date of last revision: 18 AUG 1994
--          Environment: Informix Online 5.01 and I-SQL 4.11
--
-- This file calculates the dollar amount of damage to be attributed to
-- each MSO last inspecting the vessel which had the casualty.
-- The results are grouped by vessel service and MSO and finally district.
```

```
--DROP TABLE t1;
```

```
SELECT
  last_insp.dist,
  last_insp.unit,
  last_insp.service,
  last_insp.subject,
  cirt.total_damage
FROM
  last_insp,
  civt,
  cirt
WHERE
  cirt.mccase = civt.mccase
  AND civt.subject = last_insp.subject
GROUP BY
  last_insp.dist,
  last_insp.unit,
  last_insp.service,
  last_insp.subject,
  cirt.total_damage
ORDER BY
  last_insp.dist,
  last_insp.unit,
  last_insp.service,
  last_insp.subject
INTO TEMP
  t1;
```

```
OUTPUT TO output/prop_cas.out
SELECT
  t1.dist,
  t1.unit[1,3],
  t1.service,
  SUM(t1.total_damage) total_damage
```

FROM  
t1  
GROUP BY  
t1.dist,  
t1.unit[1,3],  
t1.service  
ORDER BY  
t1.dist,  
t1.unit[1,3],  
t1.service;



```

OUTPUT TO output/cas_mso.out
--           File: cas_mso.sql
--           Author: Michael M. Delleney
-- Date of last revision: 18 AUG 1994
--           Environment: Informix Online 5.01 and I-SQL 4.11
--
-- Determine from LAST_INSP how many casualties are to be counted against the
-- district/unit performing the last inspection prior to the casualty.

```

```

SELECT
  last_insp.dist      district,
  last_insp.unit[1,3] mso,
  last_insp.service   service,
  SUM(counter)        casualties
FROM
  last_insp
GROUP BY
  last_insp.dist,
  last_insp.unit[1,3],
  last_insp.service
ORDER BY
  last_insp.dist,
  last_insp.unit[1,3],
  last_insp.service;

```

```

OUTPUT TO output/insp_mso.out

```

```
--          File: insp_mso.sql
--          Author: Michael M. Delleney
-- Date of last revision: 18 AUG 1994
--          Environment: Informix Online 5.01 and I-SQL 4.11
--
-- Determine from INSP how many inspections by district, unit, and vessel
-- service were performed on US vessels between the years 1992 and 1993
-- inclusive.
```

```
SELECT
    insp.dist      district,
    insp.unit[1,3] mso,
    insp.service   service,
    SUM(insp.counter) inspections
FROM
    insp
GROUP BY
    insp.dist,
    insp.unit[1,3],
    insp.service
ORDER BY
    insp.dist,
    insp.unit[1,3],
    insp.service;
```

```
--          File: per_cas.sql
--          Author: Michael M. Delleney
-- Date of last revision: 18 AUG 1994
--          Environment: Informix Online 5.01 and I-SQL 4.11
--
-- This file calculates the number of deaths and injuries to be
-- attributed to each MSO last inspecting the vessel which had the casualty.
-- The results are grouped by vessel service and MSO and finally district.
```

```
DROP TABLE t1;
```

```
SELECT
  last_insp.dist,
  last_insp.service,
  last_insp.subject,
  SUM(cpct.ddead) deaths,
  SUM(cpct.dinjury) injuries
FROM
  last_insp,
  cpct
WHERE
  last_insp.subject = cpct.subject
GROUP BY
  last_insp.dist,
  last_insp.service,
  last_insp.subject
ORDER BY
  last_insp.dist,
  last_insp.service,
  last_insp.subject
INTO TEMP
  t1;
```

```
OUTPUT TO output/pers_cas.out
SELECT
  t1.dist,
  t1.service,
  SUM(t1.deaths) deaths,
  SUM(t1.injuries) injuries
FROM
  t1
GROUP BY
  t1.dist,
  t1.service
```

ORDER BY  
t1.dist,  
t1.service;

```

--          File: pol_cas.sql
--          Author: Michael M. Delleney
-- Date of last revision: 18 AUG 1994
--          Environment: Informix Online 5.01 and I-SQL 4.11
--
-- This file calculates the amount of damage to be attributed to each MSO
-- last inspecting the vessel which had the casualty. The results are
-- grouped by vessel service and MSO and finally district.

```

```

DROP TABLE t1;

```

```

SELECT
  last_insp.dist,
  last_insp.service,
  last_insp.subject,
  SUM(cpd.in_water_spilled + cpdt.out_water_spilled) quantity
FROM
  last_insp,
  cpdt,
  civt
WHERE
  civt.subject = cpdt.subject
  AND cpdt.subject = last_insp.subject
GROUP BY
  last_insp.dist,
  last_insp.service,
  last_insp.subject
ORDER BY
  last_insp.dist,
  last_insp.service,
  last_insp.subject
INTO TEMP
t1;

```

```

OUTPUT TO output/pol_cas.out
SELECT
  t1.dist,
  t1.service,
  SUM(t1.quantity) quantity
FROM
  t1
GROUP BY
  t1.dist,
  t1.service

```

ORDER BY  
t1.dist,  
t1.service;

```

--          File: prop_cas.sql
--          Author: Michael M. Delleney
-- Date of last revision: 18 AUG 1994
--          Environment: Informix Online 5.01 and I-SQL 4.11
--
-- This file calculates the dollar amount of damage to be attributed to
-- each MSO last inspecting the vessel which had the casualty.
-- The results are grouped by vessel service and MSO and finally district.

```

```

DROP TABLE t1;

```

```

SELECT
  last_insp.dist,
  last_insp.service,
  last_insp.subject,
  cirt.total_damage
FROM
  last_insp,
  civt,
  cirt
WHERE
  cirt.mccase = civt.mccase
  AND civt.subject = last_insp.subject
GROUP BY
  last_insp.dist,
  last_insp.service,
  last_insp.subject,
  cirt.total_damage
ORDER BY
  last_insp.dist,
  last_insp.service,
  last_insp.subject
INTO TEMP
  t1;

```

```

OUTPUT TO output/prop_cas.out

```

```

SELECT
  t1.dist,
  t1.service,
  SUM(t1.total_damage) total_damage
FROM
  t1
GROUP BY
  t1.dist,

```

t1.service  
ORDER BY  
t1.dist,  
t1.service;

OUTPUT TO output/cas\_dist.out



```
--          File: cas_dist.sql
--          Author: Michael M. Delleney
-- Date of last revision: 18 AUG 1994
--          Environment: Informix Online 5.01 and I-SQL 4.11
--
-- Determine from LAST_INSP how many casualties are to be counted against the
-- district performing the last inspection prior to the casualty.
```

```
SELECT
  last_insp.dist      district,
  last_insp.service   service,
  SUM(counter)        casualties
FROM
  last_insp
GROUP BY
  last_insp.dist,
  last_insp.service
ORDER BY
  last_insp.dist,
  last_insp.service;
```

```
OUTPUT TO output/insp_dist.out
```

```
--          File: insp_dist.sql
--          Author: Michael M. Delleney
-- Date of last revision: 18 AUG 1994
--          Environment: Informix Online 5.01 and I-SQL 4.11
--
-- Determine from INSP how many inspections by district and vessel
-- service were performed on US vessels between the years 1992 and 1993
-- inclusive.
```

```
SELECT
  insp.dist      district,
  insp.service   service,
  SUM(insp.counter) inspections
FROM
  insp
GROUP BY
  insp.dist,
  insp.service
ORDER BY
  insp.dist,
  insp.service;
```

```
OUTPUT TO output/in_cevt.out
```

```
--          File: counting.sql
--          Author: Michael M. Delleney
-- Date of last revision: 26 AUG 1994
--          Environment: Informix Online 5.01 and I-SQL 4.11
--
-- The purpose of the queries in this file are to determine, by MSO, MIO, and
-- service, how many of the cases involving vessel casualties are listed in
-- and out of cevt. Of those so listed as being in cevt, how many map to the
-- intervention activities outlined in "Progress Report on Project 3304.3 -
-- Research Methods to Analyze the Relationships Between the Inspection
-- Boarding Process and the Office of Marine Safety Goals: Task 3.1 -
-- Intervention Analysis, Draft TTC-1321" and how many map to "other"
-- activities.
```

```
-- Select those entries in last_insp which are also in cevt.
```

```
SELECT
  dist,
  service,
  SUM(counter) counter
FROM
  last_insp
WHERE
  mccase IN (SELECT mccase FROM cevt)
GROUP BY
  dist,
  service
ORDER BY
  dist,
  service;
```

```
OUTPUT TO output/out_cevt.out
```

```
-- Now we want to determine how many vessel casualties listed in last_insp are
-- not also listed in cevt.
```

```
SELECT
  dist,
  service,
  SUM(counter) counter
FROM
  last_insp
WHERE
  mccase NOT IN (SELECT mccase FROM cevt)
```

GROUP BY

dist,  
service

ORDER BY

dist,  
service;

OUTPUT TO output/intervene.out

-- Select and count those entries in last\_insp which do not have an "other"  
-- ("0") entry in cevt but have some other entry from the set "1"-"9".

SELECT

dist,  
service,  
SUM(counter) counter

FROM

last\_insp

WHERE

mccase IN (SELECT mccase FROM cevt WHERE dtype  
IN ("1","2","3","4","5","6","7","8","9"))

GROUP BY

dist,  
service,  
counter

ORDER BY

dist,  
service,  
counter;

OUTPUT TO output/other.out

-- Select and count those entries in last\_insp which have an "other" ("0")  
-- entry in cevt. Be sure and filter out those entries that do, in fact  
-- have intervention activities also listed.

SELECT

dist,  
service,  
SUM(counter) counter

FROM

last\_insp

WHERE

mccase IN (SELECT mccase FROM cevt WHERE dtype IN ("0"))  
AND mccase NOT IN (SELECT mccase FROM cevt WHERE dtype  
IN ("1","2","3","4","5","6","7","8","9"))

GROUP BY

dist,

service

ORDER BY

dist,

service;

```
--          File: int_act_1.sql
--          Author: Michael M. Delleney
-- Date of last revision: 18 AUG 1994
--          Environment: Informix Online 5.01 and I-SQL 4.11
--
-- Finds and totals the number of Cargo Handling/Pollution Control
-- intervention activities from cevt.
```

```
DROP TABLE t1;
```

```
SELECT
  last_insp.dist,
  last_insp.service,
  last_insp.subject,
  cevt.dtype,
  SUM(cevt.counter) counter
FROM
  last_insp,
  cevt
WHERE
  last_insp.mccase = cevt.mccase
  AND cevt.dtype = "1"
GROUP BY
  last_insp.dist,
  last_insp.service,
  last_insp.subject,
  cevt.dtype
ORDER BY
  last_insp.dist,
  last_insp.service,
  last_insp.subject,
  cevt.dtype
INTO TEMP
  t1;
```

```
OUTPUT TO output/int_act_1.out
SELECT
  t1.dist,
  t1.service,
  t1.dtype,
  SUM(t1.counter) counter
FROM
  t1
GROUP BY
```

t1.dist,  
t1.service,  
t1.dtype  
ORDER BY  
t1.dist,  
t1.service,  
t1.dtype;

```
--          File: int_act_2.sql
--          Author: Michael M. Delleney
-- Date of last revision: 18 AUG 1994
--          Environment: Informix Online 5.01 and I-SQL 4.11
--
-- Finds and totals the number of Steering/Navigation
-- intervention activities from cevt.
```

```
DROP TABLE t1;
```

```
SELECT
  last_insp.dist,
  last_insp.service,
  last_insp.subject,
  cevt.dtype,
  SUM(cevt.counter) counter
FROM
  last_insp,
  cevt
WHERE
  last_insp.mccase = cevt.mccase
  AND cevt.dtype = "2"
GROUP BY
  last_insp.dist,
  last_insp.service,
  last_insp.subject,
  cevt.dtype
ORDER BY
  last_insp.dist,
  last_insp.service,
  last_insp.subject,
  cevt.dtype
INTO TEMP
  t1;
```

```
OUTPUT TO output/int_act_2.out
SELECT
  t1.dist,
  t1.service,
  t1.dtype,
  SUM(t1.counter) counter
FROM
  t1
```



**GROUP BY**

t1.dist,

t1.service,

t1.dtype

**ORDER BY**

t1.dist,

t1.service,

t1.dtype;

-- File: int\_act\_3.sql  
-- Author: Michael M. Delleney  
-- Date of last revision: 18 AUG 1994  
-- Environment: Informix Online 5.01 and I-SQL 4.11  
--  
-- Finds and totals the number of Document/Paperwork  
-- intervention activities from cevt.

DROP TABLE t1;

SELECT  
last\_insp.dist,  
last\_insp.service,  
last\_insp.subject,  
cevt.dtype,  
SUM(cevt.counter) counter  
FROM  
last\_insp,  
cevt  
WHERE  
last\_insp.mccase = cevt.mccase  
AND cevt.dtype = "3"  
GROUP BY  
last\_insp.dist,  
last\_insp.service,  
last\_insp.subject,  
cevt.dtype  
ORDER BY  
last\_insp.dist,  
last\_insp.service,  
last\_insp.subject,  
cevt.dtype  
INTO TEMP  
t1;

OUTPUT TO output/int\_act\_3.out  
SELECT  
t1.dist,  
t1.service,  
t1.dtype,  
SUM(t1.counter) counter  
FROM  
t1  
GROUP BY

t1.dist,  
t1.service,  
t1.dtype  
ORDER BY  
t1.dist,  
t1.service,  
t1.dtype;

```
--          File: int_act_4.sql
--          Author: Michael M. Delleney
-- Date of last revision: 18 AUG 1994
--          Environment: Informix Online 5.01 and I-SQL 4.11
--
-- Finds and totals the number of Drills/Human Factors
-- intervention activities from cevt.
```

```
DROP TABLE t1;
```

```
SELECT
  last_insp.dist,
  last_insp.service,
  last_insp.subject,
  cevt.dtype,
  SUM(cevt.counter) counter
FROM
  last_insp,
  cevt
WHERE
  last_insp.mccase = cevt.mccase
  AND cevt.dtype = "4"
GROUP BY
  last_insp.dist,
  last_insp.service,
  last_insp.subject,
  cevt.dtype
ORDER BY
  last_insp.dist,
  last_insp.service,
  last_insp.subject,
  cevt.dtype
INTO TEMP
  t1;
```

```
OUTPUT TO output/int_act_4.out
```

```
SELECT
  t1.dist,
  t1.service,
  t1.dtype,
  SUM(t1.counter) counter
FROM
  t1
GROUP BY
```

t1.dist,  
t1.service,  
t1.dtype  
ORDER BY  
t1.dist,  
t1.service,  
t1.dtype;

-- File: int\_act\_5.sql  
-- Author: Michael M. Delleney  
-- Date of last revision: 18 AUG 1994  
-- Environment: Informix Online 5.01 and I-SQL 4.11  
--  
-- Finds and totals the number of Auxiliary Systems  
-- intervention activities from cevt.

DROP TABLE t1;

SELECT  
last\_insp.dist,  
last\_insp.service,  
last\_insp.subject,  
cevt.dtype,  
SUM(cevt.counter) counter  
FROM  
last\_insp,  
cevt  
WHERE  
last\_insp.mccase = cevt.mccase  
AND cevt.dtype = "5"  
GROUP BY  
last\_insp.dist,  
last\_insp.service,  
last\_insp.subject,  
cevt.dtype  
ORDER BY  
last\_insp.dist,  
last\_insp.service,  
last\_insp.subject,  
cevt.dtype  
INTO TEMP  
t1;

OUTPUT TO output/int\_act\_5.out

SELECT  
t1.dist,  
t1.service,  
t1.dtype,  
SUM(t1.counter) counter  
FROM  
t1  
GROUP BY

t1.dist,  
t1.service,  
t1.dtype  
ORDER BY  
t1.dist,  
t1.service,  
t1.dtype;

-- File: int\_act\_6.sql  
-- Author: Michael M. Delleney  
-- Date of last revision: 18 AUG 1994  
-- Environment: Informix Online 5.01 and I-SQL 4.11  
--  
-- Finds and totals the number of Power Plant intervention activities from cevt.

DROP TABLE t1;

SELECT  
last\_insp.dist,  
last\_insp.service,  
last\_insp.subject,  
cevt.dtype,  
SUM(cevt.counter) counter  
FROM  
last\_insp,  
cevt  
WHERE  
last\_insp.mccase = cevt.mccase  
AND cevt.dtype = "6"  
GROUP BY  
last\_insp.dist,  
last\_insp.service,  
last\_insp.subject,  
cevt.dtype  
ORDER BY  
last\_insp.dist,  
last\_insp.service,  
last\_insp.subject,  
cevt.dtype  
INTO TEMP  
t1;

OUTPUT TO output/int\_act\_6.out  
SELECT  
t1.dist,  
t1.service,  
t1.dtype,  
SUM(t1.counter) counter  
FROM  
t1  
GROUP BY  
t1.dist,



t1.service,  
t1.dtype  
ORDER BY  
t1.dist,  
t1.service,  
t1.dtype;

-- File: int\_act\_7.sql  
-- Author: Michael M. Delleney  
-- Date of last revision: 18 AUG 1994  
-- Environment: Informix Online 5.01 and I-SQL 4.11  
--  
-- Finds and totals the number of Fire Fighting and Prevention  
-- intervention activities from cevt.

DROP TABLE t1;

SELECT  
last\_insp.dist,  
last\_insp.service,  
last\_insp.subject,  
cevt.dtype,  
SUM(cevt.counter) counter  
FROM  
last\_insp,  
cevt  
WHERE  
last\_insp.mccase = cevt.mccase  
AND cevt.dtype = "7"  
GROUP BY  
last\_insp.dist,  
last\_insp.service,  
last\_insp.subject,  
cevt.dtype  
ORDER BY  
last\_insp.dist,  
last\_insp.service,  
last\_insp.subject,  
cevt.dtype  
INTO TEMP  
t1;

OUTPUT TO output/int\_act\_7.out  
SELECT  
t1.dist,  
t1.service,  
t1.dtype,  
SUM(t1.counter) counter  
FROM  
t1  
GROUP BY

t1.dist,  
t1.service,  
t1.dtype  
ORDER BY  
t1.dist,  
t1.service,  
t1.dtype;

```
--          File: int_act_8.sql
--          Author: Michael M. Delleney
-- Date of last revision: 18 AUG 1994
--          Environment: Informix Online 5.01 and I-SQL 4.11
--
-- Finds and totals the number of HULL intervention activities from cevt.
```

```
DROP TABLE t1;
```

```
SELECT
  last_insp.dist,
  last_insp.service,
  last_insp.subject,
  cevt.dtype,
  SUM(cevt.counter) counter
FROM
  last_insp,
  cevt
WHERE
  last_insp.mccase = cevt.mccase
  AND cevt.dtype = "8"
GROUP BY
  last_insp.dist,
  last_insp.service,
  last_insp.subject,
  cevt.dtype
ORDER BY
  last_insp.dist,
  last_insp.service,
  last_insp.subject,
  cevt.dtype
INTO TEMP
  t1;
```

```
OUTPUT TO output/int_act_8.out
```

```
SELECT
  t1.dist,
  t1.service,
  t1.dtype,
  SUM(t1.counter) counter
FROM
  t1
GROUP BY
  t1.dist,
```

t1.service,  
t1.dtype  
ORDER BY  
t1.dist,  
t1.service,  
t1.dtype;

```
--          File: int_act_9.sql
--          Author: Michael M. Delleney
-- Date of last revision: 18 AUG 1994
--          Environment: Informix Online 5.01 and I-SQL 4.11
--
-- Finds and totals the number of Life Saving
-- intervention activities from cevt.
```

```
DROP TABLE t1;
```

```
SELECT
  last_insp.dist,
  last_insp.service,
  last_insp.subject,
  cevt.dtype,
  SUM(cevt.counter) counter
FROM
  last_insp,
  cevt
WHERE
  last_insp.mccase = cevt.mccase
  AND cevt.dtype = "9"
GROUP BY
  last_insp.dist,
  last_insp.service,
  last_insp.subject,
  cevt.dtype
ORDER BY
  last_insp.dist,
  last_insp.service,
  last_insp.subject,
  cevt.dtype
INTO TEMP
  t1;
```

```
OUTPUT TO output/int_act_9.out
SELECT
  t1.dist,
  t1.service,
  t1.dtype,
  SUM(t1.counter) counter
FROM
  t1
GROUP BY
```

t1.dist,  
t1.service,  
t1.dtype  
ORDER BY  
t1.dist,  
t1.service,  
t1.dtype;

OUTPUT TO output/in\_cevt.out

-- File: counting.sql

-- Author: Michael M. Delleney

-- Date of last revision: 26 AUG 1994

-- Environment: Informix Online 5.01 and I-SQL 4.11

--

--

-- The purpose of the queries in this file are to determine, by MSO, MIO, and  
-- service, how many of the cases involving vessel casualties are listed in  
-- and out of cevt. Of those so listed as being in cevt, how many map to the  
-- intervention activities outlined in "Progress Report on Project 3304.3 -  
-- Research Methods to Analyze the Relationships Between the Inspection  
-- Boarding Process and the Office of Marine Safety Goals: Task 3.1 -  
-- Intervention Analysis, Draft TTC-1321" and how many map to "other"  
-- activities.

-- Select those entries in last\_insp which are also in cevt.

SELECT

dist,

unit[1,3],

service,

SUM(counter) counter

FROM

last\_insp

WHERE

mccase IN (SELECT mccase FROM cevt)

GROUP BY

dist,

unit[1,3],

service

ORDER BY

dist,

unit[1,3],

service;

OUTPUT TO output/out\_cevt.out

-- Now we want to determine how many vessel casualties listed in last\_insp are  
-- not also listed in cevt.

SELECT

dist,

unit[1,3],



```

    service,
    SUM(counter) counter
FROM
    last_insp
WHERE
    mccase NOT IN (SELECT mccase FROM cevt)
GROUP BY
    dist,
    unit[1,3],
    service
ORDER BY
    dist,
    unit[1,3],
    service;

```

OUTPUT TO output/intervene.out

```

-- Select and count those entries in last_insp which do not have an "other"
-- ("0") entry in cevt but have some other entry from the set "1"-"9".

```

```

SELECT
    dist,
    unit[1,3],
    service,
    SUM(counter) counter
FROM
    last_insp
WHERE
    mccase IN (SELECT mccase FROM cevt WHERE dtype
               IN ("1","2","3","4","5","6","7","8","9"))
GROUP BY
    dist,
    unit[1,3],
    service,
    counter
ORDER BY
    dist,
    unit[1,3],
    service,
    counter;

```

OUTPUT TO output/other.out

```

-- Select and count those entries in last_insp which have an "other" ("0")
-- entry in cevt. Be sure and filter out those entries that do, in fact
-- have intervention activities also listed.

```

```

SELECT
  dist,
  unit[1,3],
  service,
  SUM(counter) counter
FROM
  last_insp
WHERE
  mccase IN (SELECT mccase FROM cevt WHERE dtype IN ("0"))
  AND mccase NOT IN (SELECT mccase FROM cevt WHERE dtype
                      IN ("1","2","3","4","5","6","7","8","9"))
GROUP BY
  dist,
  unit[1,3],
  service
ORDER BY
  dist,
  unit[1,3],
  service;

```

```
--          File: int_act_1.sql
--          Author: Michael M. Delleney
-- Date of last revision: 18 AUG 1994
--          Environment: Informix Online 5.01 and I-SQL 4.11
--
-- Finds and totals the number of Cargo Handling/Pollution Control
-- intervention activities from cevt.
```

```
DROP TABLE t1;
```

```
SELECT
  last_insp.dist,
  last_insp.unit,
  last_insp.service,
  last_insp.subject,
  cevt.dtype,
  SUM(cevt.counter) counter
FROM
  last_insp,
  cevt
WHERE
  last_insp.mccase = cevt.mccase
  AND cevt.dtype = "1"
GROUP BY
  last_insp.dist,
  last_insp.unit,
  last_insp.service,
  last_insp.subject,
  cevt.dtype
ORDER BY
  last_insp.dist,
  last_insp.unit,
  last_insp.service,
  last_insp.subject,
  cevt.dtype
INTO TEMP
  t1;
```

```
OUTPUT TO output/int_act_1.out
SELECT
  t1.dist,
  t1.unit[1,3],
  t1.service,
  t1.dtype,
```

```
SUM(t1.counter) counter
FROM
  t1
GROUP BY
  t1.dist,
  t1.unit[1,3],
  t1.service,
  t1.dtype
ORDER BY
  t1.dist,
  t1.unit[1,3],
  t1.service,
  t1.dtype;
```

```
--          File: int_act_2.sql
--          Author: Michael M. Delleney
-- Date of last revision: 18 AUG 1994
--          Environment: Informix Online 5.01 and I-SQL 4.11
--
-- Finds and totals the number of Steering/Navigation
-- intervention activities from cevt.
```

```
DROP TABLE t1;
```

```
SELECT
  last_insp.dist,
  last_insp.unit,
  last_insp.service,
  last_insp.subject,
  cevt.dtype,
  SUM(cevt.counter) counter
FROM
  last_insp,
  cevt
WHERE
  last_insp.mccase = cevt.mccase
  AND cevt.dtype = "2"
GROUP BY
  last_insp.dist,
  last_insp.unit,
  last_insp.service,
  last_insp.subject,
  cevt.dtype
ORDER BY
  last_insp.dist,
  last_insp.unit,
  last_insp.service,
  last_insp.subject,
  cevt.dtype
INTO TEMP
  t1;
```

```
OUTPUT TO output/int_act_2.out
SELECT
  t1.dist,
  t1.unit[1,3],
  t1.service,
  t1.dtype,
```

```
SUM(t1.counter) counter
FROM
  t1
GROUP BY
  t1.dist,
  t1.unit[1,3],
  t1.service,
  t1.dtype
ORDER BY
  t1.dist,
  t1.unit[1,3],
  t1.service,
  t1.dtype;
```

```
--          File: int_act_3.sql
--          Author: Michael M. Delleney
-- Date of last revision: 18 AUG 1994
--          Environment: Informix Online 5.01 and I-SQL 4.11
--
-- Finds and totals the number of Document/Paperwork
-- intervention activities from cevt.
```

```
DROP TABLE t1;
```

```
SELECT
  last_insp.dist,
  last_insp.unit,
  last_insp.service,
  last_insp.subject,
  cevt.dtype,
  SUM(cevt.counter) counter
FROM
  last_insp,
  cevt
WHERE
  last_insp.mccase = cevt.mccase
  AND cevt.dtype = "3"
GROUP BY
  last_insp.dist,
  last_insp.unit,
  last_insp.service,
  last_insp.subject,
  cevt.dtype
ORDER BY
  last_insp.dist,
  last_insp.unit,
  last_insp.service,
  last_insp.subject,
  cevt.dtype
INTO TEMP
  t1;
```

```
OUTPUT TO output/int_act_3.out
SELECT
  t1.dist,
  t1.unit[1,3],
  t1.service,
  t1.dtype,
```

```
SUM(t1.counter) counter
FROM
  t1
GROUP BY
  t1.dist,
  t1.unit[1,3],
  t1.service,
  t1.dtype
ORDER BY
  t1.dist,
  t1.unit[1,3],
  t1.service,
  t1.dtype;
```



```
--          File: int_act_4.sql
--          Author: Michael M. Delleney
-- Date of last revision: 18 AUG 1994
--          Environment: Informix Online 5.01 and I-SQL 4.11
--
-- Finds and totals the number of Drills/Human Factors
-- intervention activities from cevt.
```

```
DROP TABLE t1;
```

```
SELECT
  last_insp.dist,
  last_insp.unit,
  last_insp.service,
  last_insp.subject,
  cevt.dtype,
  SUM(cevt.counter) counter
FROM
  last_insp,
  cevt
WHERE
  last_insp.mccase = cevt.mccase
  AND cevt.dtype = "4"
GROUP BY
  last_insp.dist,
  last_insp.unit,
  last_insp.service,
  last_insp.subject,
  cevt.dtype
ORDER BY
  last_insp.dist,
  last_insp.unit,
  last_insp.service,
  last_insp.subject,
  cevt.dtype
INTO TEMP
  t1;
```

```
OUTPUT TO output/int_act_4.out
SELECT
  t1.dist,
  t1.unit[1,3],
  t1.service,
  t1.dtype,
```

```
SUM(t1.counter) counter
FROM
  t1
GROUP BY
  t1.dist,
  t1.unit[1,3],
  t1.service,
  t1.dtype
ORDER BY
  t1.dist,
  t1.unit[1,3],
  t1.service,
  t1.dtype;
```

```

--          File: int_act_5.sql
--          Author: Michael M. Delleney
-- Date of last revision: 18 AUG 1994
--          Environment: Informix Online 5.01 and I-SQL 4.11
--
-- Finds and totals the number of Auxiliary Systems
-- intervention activities from cevt.

```

```

DROP TABLE t1;

```

```

SELECT
  last_insp.dist,
  last_insp.unit,
  last_insp.service,
  last_insp.subject,
  cevt.dtype,
  SUM(cevt.counter) counter
FROM
  last_insp,
  cevt
WHERE
  last_insp.mccase = cevt.mccase
  AND cevt.dtype = "5"
GROUP BY
  last_insp.dist,
  last_insp.unit,
  last_insp.service,
  last_insp.subject,
  cevt.dtype
ORDER BY
  last_insp.dist,
  last_insp.unit,
  last_insp.service,
  last_insp.subject,
  cevt.dtype
INTO TEMP
  t1;

```

```

OUTPUT TO output/int_act_5.out
SELECT
  t1.dist,
  t1.unit[1,3],
  t1.service,
  t1.dtype,

```

```
SUM(t1.counter) counter
FROM
  t1
GROUP BY
  t1.dist,
  t1.unit[1,3],
  t1.service,
  t1.dtype
ORDER BY
  t1.dist,
  t1.unit[1,3],
  t1.service,
  t1.dtype;
```

```
--          File: int_act_6.sql
--          Author: Michael M. Delleney
-- Date of last revision: 18 AUG 1994
--          Environment: Informix Online 5.01 and I-SQL 4.11
--
-- Finds and totals the number of Power Plant intervention activities from cevt.
```

```
DROP TABLE t1;
```

```
SELECT
  last_insp.dist,
  last_insp.unit,
  last_insp.service,
  last_insp.subject,
  cevt.dtype,
  SUM(cevt.counter) counter
FROM
  last_insp,
  cevt
WHERE
  last_insp.mccase = cevt.mccase
  AND cevt.dtype = "6"
GROUP BY
  last_insp.dist,
  last_insp.unit,
  last_insp.service,
  last_insp.subject,
  cevt.dtype
ORDER BY
  last_insp.dist,
  last_insp.unit,
  last_insp.service,
  last_insp.subject,
  cevt.dtype
INTO TEMP
  t1;
```

```
OUTPUT TO output/int_act_6.out
```

```
SELECT
  t1.dist,
  t1.unit[1,3],
  t1.service,
  t1.dtype,
  SUM(t1.counter) counter
```

FROM

t1

GROUP BY

t1.dist,

t1.unit[1,3],

t1.service,

t1.dtype

ORDER BY

t1.dist,

t1.unit[1,3],

t1.service,

t1.dtype;

```
--          File: int_act_7.sql
--          Author: Michael M. Delleney
-- Date of last revision: 18 AUG 1994
--          Environment: Informix Online 5.01 and I-SQL 4.11
--
-- Finds and totals the number of Fire Fighting and Prevention
-- intervention activities from cevt.
```

```
DROP TABLE t1;
```

```
SELECT
  last_insp.dist,
  last_insp.unit,
  last_insp.service,
  last_insp.subject,
  cevt.dtype,
  SUM(cevt.counter) counter
FROM
  last_insp,
  cevt
WHERE
  last_insp.mccase = cevt.mccase
  AND cevt.dtype = "7"
GROUP BY
  last_insp.dist,
  last_insp.unit,
  last_insp.service,
  last_insp.subject,
  cevt.dtype
ORDER BY
  last_insp.dist,
  last_insp.unit,
  last_insp.service,
  last_insp.subject,
  cevt.dtype
INTO TEMP
  t1;
```

```
OUTPUT TO output/int_act_7.out
SELECT
  t1.dist,
  t1.unit[1,3],
  t1.service,
```

```
t1.dtype,  
SUM(t1.counter) counter  
FROM  
t1  
GROUP BY  
t1.dist,  
t1.unit[1,3],  
t1.service,  
t1.dtype  
ORDER BY  
t1.dist,  
t1.unit[1,3],  
t1.service,  
t1.dtype;
```



```
--          File: int_act_8.sql
--          Author: Michael M. Delleney
-- Date of last revision: 18 AUG 1994
--          Environment: Informix Online 5.01 and I-SQL 4.11
--
-- Finds and totals the number of HULL intervention activities from cevt.
```

```
DROP TABLE t1;
```

```
SELECT
  last_insp.dist,
  last_insp.unit,
  last_insp.service,
  last_insp.subject,
  cevt.dtype,
  SUM(cevt.counter) counter
FROM
  last_insp,
  cevt
WHERE
  last_insp.mccase = cevt.mccase
  AND cevt.dtype = "8"
GROUP BY
  last_insp.dist,
  last_insp.unit,
  last_insp.service,
  last_insp.subject,
  cevt.dtype
ORDER BY
  last_insp.dist,
  last_insp.unit,
  last_insp.service,
  last_insp.subject,
  cevt.dtype
INTO TEMP
  t1;
```

```
OUTPUT TO output/int_act_8.out
```

```
SELECT
  t1.dist,
  t1.unit[1,3],
  t1.service,
  t1.dtype,
  SUM(t1.counter) counter
```

FROM  
t1  
GROUP BY  
t1.dist,  
t1.unit[1,3],  
t1.service,  
t1.dtype  
ORDER BY  
t1.dist,  
t1.unit[1,3],  
t1.service,  
t1.dtype;

```
--          File: int_act_9.sql
--          Author: Michael M. Delleney
-- Date of last revision: 18 AUG 1994
--          Environment: Informix Online 5.01 and I-SQL 4.11
--
-- Finds and totals the number of Life Saving
-- intervention activities from cevt.
```

```
DROP TABLE t1;
```

```
SELECT
  last_insp.dist,
  last_insp.unit,
  last_insp.service,
  last_insp.subject,
  cevt.dtype,
  SUM(cevt.counter) counter
FROM
  last_insp,
  cevt
WHERE
  last_insp.mccase = cevt.mccase
  AND cevt.dtype = "9"
GROUP BY
  last_insp.dist,
  last_insp.unit,
  last_insp.service,
  last_insp.subject,
  cevt.dtype
ORDER BY
  last_insp.dist,
  last_insp.unit,
  last_insp.service,
  last_insp.subject,
  cevt.dtype
INTO TEMP
  t1;
```

```
OUTPUT TO output/int_act_9.out
SELECT
  t1.dist,
  t1.unit[1,3],
  t1.service,
  t1.dtype,
```

```
SUM(t1.counter) counter
FROM
  t1
GROUP BY
  t1.dist,
  t1.unit[1,3],
  t1.service,
  t1.dtype
ORDER BY
  t1.dist,
  t1.unit[1,3],
  t1.service,
  t1.dtype;
```

```

--          File: per_cas.sql
--          Author: Michael M. Delleney
-- Date of last revision: 18 AUG 1994
--          Environment: Informix Online 5.01 and I-SQL 4.11
--
-- This file calculates the number of deaths and injuries to be
-- attributed to each MSO last inspecting the vessel which had the casualty.
-- The results are grouped by vessel service and MSO and finally district.

```

```
--DROP TABLE t1;
```

```

SELECT
  last_insp.dist,
  last_insp.unit,
  last_insp.service,
  last_insp.subject,
  SUM(cpct.ddead) deaths,
  SUM(cpct.dinjury) injuries
FROM
  last_insp,
  cpct
WHERE
  last_insp.subject = cpct.subject
GROUP BY
  last_insp.dist,
  last_insp.unit,
  last_insp.service,
  last_insp.subject
ORDER BY
  last_insp.dist,
  last_insp.unit,
  last_insp.service,
  last_insp.subject
INTO TEMP
  t1;

```

```

OUTPUT TO output/per_cas.out
SELECT
  t1.dist,
  t1.unit[1,3],
  t1.service,
  SUM(t1.deaths) deaths,
  SUM(t1.injuries) injuries

```

FROM  
t1  
GROUP BY  
t1.dist,  
t1.unit[1,3],  
t1.service  
ORDER BY  
t1.dist,  
t1.unit[1,3],  
t1.service;

```

--          File: pol_cas.sql
--          Author: Michael M. Delleney
-- Date of last revision: 18 AUG 1994
--          Environment: Informix Online 5.01 and I-SQL 4.11
--
-- This file calculates the amount of damage to be attributed to each MSO
-- last inspecting the vessel which had the casualty. The results are
-- grouped by vessel service and MSO and finally district.

```

```

DROP TABLE t1;

```

```

SELECT
  last_insp.dist,
  last_insp.unit,
  last_insp.service,
  last_insp.subject,
  SUM(cpd.in_water_spilled + cpdt.out_water_spilled) quantity
FROM
  last_insp,
  cpdt,
  civt
WHERE
  civt.subject = cpdt.subject
  AND cpdt.subject = last_insp.subject
GROUP BY
  last_insp.dist,
  last_insp.unit,
  last_insp.service,
  last_insp.subject
ORDER BY
  last_insp.dist,
  last_insp.unit,
  last_insp.service,
  last_insp.subject
INTO TEMP
  t1;

```

```

OUTPUT TO output/pol_cas.out

```

```

SELECT
  t1.dist,
  t1.unit[1,3],
  t1.service,
  SUM(t1.quantity) quantity
FROM

```

t1  
GROUP BY  
t1.dist,  
t1.unit[1,3],  
t1.service  
ORDER BY  
t1.dist,  
t1.unit[1,3],  
t1.service



```
--          File: prop_cas.sql
--          Author: Michael M. Delleney
-- Date of last revision: 18 AUG 1994
--          Environment: Informix Online 5.01 and I-SQL 4.11
--
-- This file calculates the dollar amount of damage to be attributed to
-- each MSO last inspecting the vessel which had the casualty.
-- The results are grouped by vessel service and MSO and finally district.
```

```
DROP TABLE t1;
```

```
SELECT
  last_insp.dist,
  last_insp.unit,
  last_insp.service,
  last_insp.subject,
  cirt.total_damage
FROM
  last_insp,
  civt,
  cirt
WHERE
  cirt.mccase = civt.mccase
  AND civt.subject = last_insp.subject
GROUP BY
  last_insp.dist,
  last_insp.unit,
  last_insp.service,
  last_insp.subject,
  cirt.total_damage
ORDER BY
  last_insp.dist,
  last_insp.unit,
  last_insp.service,
  last_insp.subject
INTO TEMP
  t1;
```

```
OUTPUT TO output/prop_cas.out
SELECT
  t1.dist,
  t1.unit[1,3],
  t1.service,
  SUM(t1.total_damage) total_damage
```

```

FROM
  t1
GROUP BY
  t1.dist,
  t1.unit[1,3],
  t1.service
ORDER BY
  t1.dist,
  t1.unit[1,3],
  t1.service;

```

OUTPUT TO output/cas\_mso.out

-- File: cas\_mso.sql

-- Author: Michael M. Delleney

-- Date of last revision: 18 AUG 1994

-- Environment: Informix Online 5.01 and I-SQL 4.11

--

-- Determine from LAST\_INSP how many casualties are to be counted against the  
 -- district/unit performing the last inspection prior to the casualty.

```

SELECT
  last_insp.dist      district,
  last_insp.unit[1,3] mso,
  last_insp.service   service,
  SUM(counter)         casualties
FROM
  last_insp
GROUP BY
  last_insp.dist,
  last_insp.unit[1,3],
  last_insp.service
ORDER BY
  last_insp.dist,
  last_insp.unit[1,3],
  last_insp.service;

```

OUTPUT TO output/insp\_mso.out  
-- File: insp\_mso.sql  
-- Author: Michael M. Delleney  
-- Date of last revision: 18 AUG 1994  
-- Environment: Informix Online 5.01 and I-SQL 4.11  
--  
-- Determine from INSP how many inspections by district, unit, and vessel  
-- service were performed on US vessels between the years 1992 and 1993  
-- inclusive.

SELECT  
    insp.dist            district,  
    insp.unit[1,3]      mso,  
    insp.service        service,  
    SUM(insp.counter) inspections  
FROM  
    insp  
GROUP BY  
    insp.dist,  
    insp.unit[1,3],  
    insp.service  
ORDER BY  
    insp.dist,  
    insp.unit[1,3],  
    insp.service;

OUTPUT TO output/in\_cevt.out

-- File: counting.sql

-- Author: Michael M. Delleney

-- Date of last revision: 26 AUG 1994

-- Environment: Informix Online 5.01 and I-SQL 4.11

--

--

-- The purpose of the queries in this file are to determine, by MSO, MIO, and  
-- service, how many of the cases involving vessel casualties are listed in  
-- and out of cevt. Of those so listed as being in cevt, how many map to the  
-- intervention activities outlined in "Progress Report on Project 3304.3 -  
-- Research Methods to Analyze the Relationships Between the Inspection  
-- Boarding Process and the Office of Marine Safety Goals: Task 3.1 -  
-- Intervention Analysis, Draft TTC-1321" and how many map to "other"  
-- activities.

-- Select those entries in last\_insp which are also in cevt.

SELECT

dist,

unit[1,3],

service,

SUM(counter) counter

FROM

last\_insp

WHERE

mccase IN (SELECT mccase FROM cevt)

GROUP BY

dist,

unit[1,3],

service

ORDER BY

dist,

unit[1,3],

service;

OUTPUT TO output/out\_cevt.out

-- Now we want to determine how many vessel casualties listed in last\_insp are  
-- not also listed in cevt.

SELECT

dist,

unit[1,3],

```

    service,
    SUM(counter) counter
FROM
    last_insp
WHERE
    mccase NOT IN (SELECT mccase FROM cevt)
GROUP BY
    dist,
    unit[1,3],
    service
ORDER BY
    dist,
    unit[1,3],
    service;

```

OUTPUT TO output/intervene.out

```

-- Select and count those entries in last_insp which do not have an "other"
-- ("0") entry in cevt but have some other entry from the set "1"-"9".

```

```

SELECT
    dist,
    unit[1,3],
    service,
    SUM(counter) counter
FROM
    last_insp
WHERE
    mccase IN (SELECT mccase FROM cevt WHERE dtype
                IN ("1","2","3","4","5","6","7","8","9"))
GROUP BY
    dist,
    unit[1,3],
    service,
    counter
ORDER BY
    dist,
    unit[1,3],
    service,
    counter;

```

OUTPUT TO output/other.out

```

-- Select and count those entries in last_insp which have an "other" ("0")
-- entry in cevt. Be sure and filter out those entries that do, in fact
-- have intervention activities also listed.

```

```

SELECT
  dist,
  unit[1,3],
  service,
  SUM(counter) counter
FROM
  last_insp
WHERE
  mccase IN (SELECT mccase FROM cevt WHERE dtype IN ("0"))
  AND mccase NOT IN (SELECT mccase FROM cevt WHERE dtype
                     IN ("1","2","3","4","5","6","7","8","9"))
GROUP BY
  dist,
  unit[1,3],
  service
ORDER BY
  dist,
  unit[1,3],
  service;

```

```
--          File: int_act_1.sql
--          Author: Michael M. Delleney
-- Date of last revision: 18 AUG 1994
--          Environment: Informix Online 5.01 and I-SQL 4.11
--
-- Finds and totals the number of Cargo Handling/Pollution Control
-- intervention activities from cevt.
```

```
DROP TABLE t1;
```

```
SELECT
  last_insp.dist,
  last_insp.unit,
  last_insp.service,
  last_insp.subject,
  cevt.dtype,
  SUM(cevt.counter) counter
FROM
  last_insp,
  cevt
WHERE
  last_insp.mccase = cevt.mccase
  AND cevt.dtype = "1"
GROUP BY
  last_insp.dist,
  last_insp.unit,
  last_insp.service,
  last_insp.subject,
  cevt.dtype
ORDER BY
  last_insp.dist,
  last_insp.unit,
  last_insp.service,
  last_insp.subject,
  cevt.dtype
INTO TEMP
  t1;
```

```
OUTPUT TO output/int_act_1.out
SELECT
  t1.dist,
  t1.unit[1,3],
  t1.service,
  t1.dtype,
```

```
SUM(t1.counter) counter
FROM
  t1
GROUP BY
  t1.dist,
  t1.unit[1,3],
  t1.service,
  t1.dtype
ORDER BY
  t1.dist,
  t1.unit[1,3],
  t1.service,
  t1.dtype;
```



```

--          File: int_act_2.sql
--          Author: Michael M. Delleney
-- Date of last revision: 18 AUG 1994
--          Environment: Informix Online 5.01 and I-SQL 4.11
--
-- Finds and totals the number of Steering/Navigation
-- intervention activities from cevt.

```

```

DROP TABLE t1;

```

```

SELECT
  last_insp.dist,
  last_insp.unit,
  last_insp.service,
  last_insp.subject,
  cevt.dtype,
  SUM(cevt.counter) counter
FROM
  last_insp,
  cevt
WHERE
  last_insp.mccase = cevt.mccase
  AND cevt.dtype = "2"
GROUP BY
  last_insp.dist,
  last_insp.unit,
  last_insp.service,
  last_insp.subject,
  cevt.dtype
ORDER BY
  last_insp.dist,
  last_insp.unit,
  last_insp.service,
  last_insp.subject,
  cevt.dtype
INTO TEMP
  t1;

```

```

OUTPUT TO output/int_act_2.out
SELECT
  t1.dist,
  t1.unit[1,3],
  t1.service,
  t1.dtype,

```

```
SUM(t1.counter) counter
FROM
  t1
GROUP BY
  t1.dist,
  t1.unit[1,3],
  t1.service,
  t1.dtype
ORDER BY
  t1.dist,
  t1.unit[1,3],
  t1.service,
  t1.dtype;
```

```
--          File: int_act_3.sql
--          Author: Michael M. Delleney
-- Date of last revision: 18 AUG 1994
--          Environment: Informix Online 5.01 and I-SQL 4.11
--
-- Finds and totals the number of Document/Paperwork
-- intervention activities from cevt.
```

```
DROP TABLE t1;
```

```
SELECT
  last_insp.dist,
  last_insp.unit,
  last_insp.service,
  last_insp.subject,
  cevt.dtype,
  SUM(cevt.counter) counter
FROM
  last_insp,
  cevt
WHERE
  last_insp.mccase = cevt.mccase
  AND cevt.dtype = "3"
GROUP BY
  last_insp.dist,
  last_insp.unit,
  last_insp.service,
  last_insp.subject,
  cevt.dtype
ORDER BY
  last_insp.dist,
  last_insp.unit,
  last_insp.service,
  last_insp.subject,
  cevt.dtype
INTO TEMP
  t1;
```

```
OUTPUT TO output/int_act_3.out
SELECT
  t1.dist,
  t1.unit[1,3],
  t1.service,
```

```
t1.dtype,  
SUM(t1.counter) counter  
FROM  
t1  
GROUP BY  
t1.dist,  
t1.unit[1,3],  
t1.service,  
t1.dtype  
ORDER BY  
t1.dist,  
t1.unit[1,3],  
t1.service,  
t1.dtype;
```

```
--          File: int_act_4.sql
--          Author: Michael M. Delleney
-- Date of last revision: 18 AUG 1994
--          Environment: Informix Online 5.01 and I-SQL 4.11
--
-- Finds and totals the number of Drills/Human Factors
-- intervention activities from cevt.
```

```
DROP TABLE t1;
```

```
SELECT
  last_insp.dist,
  last_insp.unit,
  last_insp.service,
  last_insp.subject,
  cevt.dtype,
  SUM(cevt.counter) counter
FROM
  last_insp,
  cevt
WHERE
  last_insp.mccase = cevt.mccase
  AND cevt.dtype = "4"
GROUP BY
  last_insp.dist,
  last_insp.unit,
  last_insp.service,
  last_insp.subject,
  cevt.dtype
ORDER BY
  last_insp.dist,
  last_insp.unit,
  last_insp.service,
  last_insp.subject,
  cevt.dtype
INTO TEMP
  t1;
```

```
OUTPUT TO output/int_act_4.out
SELECT
  t1.dist,
  t1.unit[1,3],
  t1.service,
  t1.dtype,
```

```
SUM(t1.counter) counter
FROM
  t1
GROUP BY
  t1.dist,
  t1.unit[1,3],
  t1.service,
  t1.dtype
ORDER BY
  t1.dist,
  t1.unit[1,3],
  t1.service,
  t1.dtype;
```

```
--          File: int_act_5.sql
--          Author: Michael M. Delleney
-- Date of last revision: 18 AUG 1994
--          Environment: Informix Online 5.01 and I-SQL 4.11
--
-- Finds and totals the number of Auxiliary Systems
-- intervention activities from cevt.
```

```
DROP TABLE t1;
```

```
SELECT
  last_insp.dist,
  last_insp.unit,
  last_insp.service,
  last_insp.subject,
  cevt.dtype,
  SUM(cevt.counter) counter
FROM
  last_insp,
  cevt
WHERE
  last_insp.mccase = cevt.mccase
  AND cevt.dtype = "5"
GROUP BY
  last_insp.dist,
  last_insp.unit,
  last_insp.service,
  last_insp.subject,
  cevt.dtype
ORDER BY
  last_insp.dist,
  last_insp.unit,
  last_insp.service,
  last_insp.subject,
  cevt.dtype
INTO TEMP
  t1;
```

```
OUTPUT TO output/int_act_5.out
SELECT
  t1.dist,
  t1.unit[1,3],
  t1.service,
  t1.dtype,
```

```
SUM(t1.counter) counter
FROM
  t1
GROUP BY
  t1.dist,
  t1.unit[1,3],
  t1.service,
  t1.dtype
ORDER BY
  t1.dist,
  t1.unit[1,3],
  t1.service,
  t1.dtype;
```



```
--          File: int_act_6.sql
--          Author: Michael M. Delleney
-- Date of last revision: 18 AUG 1994
--          Environment: Informix Online 5.01 and I-SQL 4.11
--
-- Finds and totals the number of Power Plant intervention activities from cevt.
```

```
DROP TABLE t1;
```

```
SELECT
  last_insp.dist,
  last_insp.unit,
  last_insp.service,
  last_insp.subject,
  cevt.dtype,
  SUM(cevt.counter) counter
FROM
  last_insp,
  cevt
WHERE
  last_insp.mccase = cevt.mccase
  AND cevt.dtype = "6"
GROUP BY
  last_insp.dist,
  last_insp.unit,
  last_insp.service,
  last_insp.subject,
  cevt.dtype
ORDER BY
  last_insp.dist,
  last_insp.unit,
  last_insp.service,
  last_insp.subject,
  cevt.dtype
INTO TEMP
  t1;
```

```
OUTPUT TO output/int_act_6.out
```

```
SELECT
  t1.dist,
  t1.unit[1,3],
  t1.service,
  t1.dtype,
  SUM(t1.counter) counter
```

FROM  
t1  
GROUP BY  
t1.dist,  
t1.unit[1,3],  
t1.service,  
t1.dtype  
ORDER BY  
t1.dist,  
t1.unit[1,3],  
t1.service,  
t1.dtype;

```

--          File: int_act_7.sql
--          Author: Michael M. Delleney
-- Date of last revision: 18 AUG 1994
--          Environment: Informix Online 5.01 and I-SQL 4.11
--
-- Finds and totals the number of Fire Fighting and Prevention
-- intervention activities from cevt.

```

```

DROP TABLE t1;

```

```

SELECT
  last_insp.dist,
  last_insp.unit,
  last_insp.service,
  last_insp.subject,
  cevt.dtype,
  SUM(cevt.counter) counter
FROM
  last_insp,
  cevt
WHERE
  last_insp.mccase = cevt.mccase
  AND cevt.dtype = "7"
GROUP BY
  last_insp.dist,
  last_insp.unit,
  last_insp.service,
  last_insp.subject,
  cevt.dtype
ORDER BY
  last_insp.dist,
  last_insp.unit,
  last_insp.service,
  last_insp.subject,
  cevt.dtype
INTO TEMP
  t1;

```

```

OUTPUT TO output/int_act_7.out

```

```

SELECT
  t1.dist,
  t1.unit[1,3],
  t1.service,
  t1.dtype,

```

```
SUM(t1.counter) counter
FROM
  t1
GROUP BY
  t1.dist,
  t1.unit[1,3],
  t1.service,
  t1.dtype
ORDER BY
  t1.dist,
  t1.unit[1,3],
  t1.service,
  t1.dtype;
```

```
--          File: int_act_8.sql
--          Author: Michael M. Delleney
-- Date of last revision: 18 AUG 1994
--          Environment: Informix Online 5.01 and I-SQL 4.11
--
-- Finds and totals the number of HULL intervention activities from cevt.
```

```
DROP TABLE t1;
```

```
SELECT
  last_insp.dist,
  last_insp.unit,
  last_insp.service,
  last_insp.subject,
  cevt.dtype,
  SUM(cevt.counter) counter
FROM
  last_insp,
  cevt
WHERE
  last_insp.mccase = cevt.mccase
  AND cevt.dtype = "8"
GROUP BY
  last_insp.dist,
  last_insp.unit,
  last_insp.service,
  last_insp.subject,
  cevt.dtype
ORDER BY
  last_insp.dist,
  last_insp.unit,
  last_insp.service,
  last_insp.subject,
  cevt.dtype
INTO TEMP
  t1;
```

```
OUTPUT TO output/int_act_8.out
```

```
SELECT
  t1.dist,
  t1.unit[1,3],
  t1.service,
  t1.dtype,
  SUM(t1.counter) counter
```

FROM  
t1  
GROUP BY  
t1.dist,  
t1.unit[1,3],  
t1.service,  
t1.dtype  
ORDER BY  
t1.dist,  
t1.unit[1,3],  
t1.service,  
t1.dtype;

```
--          File: int_act_9.sql
--          Author: Michael M. Delleney
-- Date of last revision: 18 AUG 1994
--          Environment: Informix Online 5.01 and I-SQL 4.11
--
-- Finds and totals the number of Life Saving
-- intervention activities from cevt.
```

```
DROP TABLE t1;
```

```
SELECT
  last_insp.dist,
  last_insp.unit,
  last_insp.service,
  last_insp.subject,
  cevt.dtype,
  SUM(cevt.counter) counter
FROM
  last_insp,
  cevt
WHERE
  last_insp.mccase = cevt.mccase
  AND cevt.dtype = "9"
GROUP BY
  last_insp.dist,
  last_insp.unit,
  last_insp.service,
  last_insp.subject,
  cevt.dtype
ORDER BY
  last_insp.dist,
  last_insp.unit,
  last_insp.service,
  last_insp.subject,
  cevt.dtype
INTO TEMP
  t1;
```

```
OUTPUT TO output/int_act_9.out
SELECT
  t1.dist,
  t1.unit[1,3],
  t1.service,
  t1.dtype,
```

```
SUM(t1.counter) counter
FROM
  t1
GROUP BY
  t1.dist,
  t1.unit[1,3],
  t1.service,
  t1.dtype
ORDER BY
  t1.dist,
  t1.unit[1,3],
  t1.service,
  t1.dtype;
```



### B.3 INFORMIX Query Files For the Econometric Analysis

This appendix contains the SQL programs used to query the MSMS database and construct the data sets used in the econometric analysis. The programs are written in INFORMIX (ISQL) and are easily translated into other SQL-based database software that are designed to manage relational databases such as SYBASE. Minor syntax modifications may be needed before these programs can be implemented from SQL-based software other than INFORMIX.

The program names appear in bold and the following contains the sequence of runs required to create each econometric data set. Programs must be run in the order in which they appear in the instructions below.

#### I. Poisson Model runs for Level I and Level III activities, MI and PS cases.

##### (i) MI Cases

1. Level I: Run MIINSP1.SQL, MIINSP2.SQL, MIINSP3.SQL.  
Then run MIPERS1.SQL, and MIPERS2.SQL for Personnel casualties, and MIPERS1.SQL, and MIPERS2.SQL for Pollution casualties.
2. Level III: Run MID3139.SQL. It includes everything from start to finish, but takes 4-5 hours to run.

##### (ii) PS Cases

1. Level I: Run PSINSP1.SQL, PSINSP2.SQL, PSINSP3.SQL.  
Then run PSPERS1.SQL, and PSPERS2.SQL for Personnel casualties, and PSPERS1.SQL, and PSPERS2.SQL for Pollution casualties.

#### II. Duration Model runs for Level II activities: U.S. flag (A-activities), Foreign flag (B-activities)

##### (i) A-activities

1. Level II: Run DUR\_A1.SQL, DUR\_A2.SQL, DUR\_A3.SQL duration data sets for each activity, A1, A2, A3, respectively.

##### (ii) B-activities

2. Level II: Run DUR\_B.SQL. Since the activities B1, B2, and B3 are distinguished by vessel service, separate analysis by service is done in the econometric analysis. The SQL program produces just one data set (that includes all services).

PROGRAMS FOR POISSON DATA SETS

# MIINSP1.SQL

{For the hours of inspection equation have (i) num\_def from IRIT and  
(ii) indicators for inspection types from both CRST and IRIT added up here.  
Need to check them against each other for integrity, and also the average  
for the data set to see if they make sense. See handout for logic of their  
inclusion in the manner of this program}

{This joins CRST and IRIT by case and aggregates CRST hours by IRIT's vkey  
This is different from earlier programs only in that VILT was being used.  
Upon USCG (Dr. Hantzes) recommendation (June meeting), IRIT is used instead}

{drop table crst\_temp0}

```
select
  irit.vkey iritvkey,
  count(*) numcases, sum(hr_hull) hull_hr, sum(hr_mach) mach_hr,
  sum(hr_train) train_hr, sum(hr_extra) extra_hr, sum(hr_textra) textra_hr,
  sum(hr_admin) admin_hr, sum(hr_travel) travel_hr, sum(hr_ttravel) ttravel_hr,
  sum(hr_other) other_hr,
  sum(irit.num_def) num_def,
  sum(irit.dinit) iritinit, sum(irit.dcert) iritcert,
  sum(irit.dreinsp) iritreinsp, sum(irit.dcoc) iritcoc, sum(irit.dhull) irithull,
  sum(irit.dothe) iritother, sum(irit.dadmin) iritadmin,
  sum(crst.dannual) crstannual, sum(crst.dreinsp) crstreinsp,
  sum(crst.dadmin) crstadmin, sum(crst.dhull) crsthull, sum(crst.dcoc) crstcoc,
  sum(crst.dconstr) crstconstr, sum(crst.dcert) crstcert,
  sum(crst.dinit) crstinit, sum(crst.dmach) crstmach, sum(crst.ddeficit) crstdef,
  sum(crst.dothe) crstother, sum(crst.drest) crstrest
```

from crst, irit

{Note the date >= 89. This is since only post-91 casualties are being  
considered. Hence choose a year with which I am comfortable (years to  
failure is not badly measured so that it affects the results. can try  
with other years e.g. 90, 88 as well).}

```
where
  irit.micase[1,2]="MI" and
  irit.vkey[1,2]="VN" and
  crst.case[1,2]="MI" and
  crst.case[3,4]>="89" and
  crst.case=irit.micase
```

```
group by irit.vkey
into temp crst_temp0;
```

```
select count(*) countcrst_temp0
from crst_temp0;
```

**MIINSP2.SQL**

(This file joins CRST\_TEMP0 (agg hours by vkey) to VIDT to identify the flag: service, flag, reg\_gt, bld\_yr, route.)

{drop table vidtcrst;}

```
select
  crst_temp0.*,
  vidt.service service, vidt.flag flag, vidt.reg_gt reg_gt,
  year(vidt.bld_dt) yearbld, vidt.route route,
  {These have many nulls and are used only for model of inspection if adequate}
  vidt.dblside_typ, vidt.dblbott_typ, vidt.prop_typ, vidt.design, vidt.hull_mat
```

from crst\_temp0, vidt

where

crst\_temp0.iritvkey=vidt.vkey and

(

vidt.service="FREIGHT SHIP" or vidt.service="PUB. TANKSHIP/BARGE" or

vidt.service="TANK SHIP" or ((vidt.service="PASSENGER" or

vidt.service="PASSENGER SHIP") and vidt.reg\_gt>=100)

) and

vidt.flag="US"

into temp vidtcrst;

select count(\*)

from vidtcrst;

**MIINSP3.SQL**

{Check to see if numbers make sense}

```
select count(*) observations, avg(hull_hr) AVG_hullhr, avg(mach_hr) AVG_machhr,  
      avg(admin_hr) AVG_adminhr, avg(reg_gt) AVG_reggt  
from persinsp;
```

```
select iritvkey, hull_hr, mach_hr, admin_hr, reg_gt  
from persinsp  
order by hull_hr;
```

# MIPERS1.SQL

(Be sure to run MIINSP1 and MIINSP2 before these two progs)  
(No incident date. But since MINMOD, post-1991(few 91s mostly 92,93))

( Here, casualty data is assembled from CIVT and CIRT.  
CIRT, and CIVT are joined by (unique) Mccase and select out only  
deep-draft vessels (hence a little use of VIDT). Personnel casualties are  
constructed from CIRT (which has no vkey) and joined to CIVT to associate  
them with a Vkey. There are duplicate Vkey records in CIVT (of the 28,821  
records, 13,548 have unique Vkey), so we need to choose only unique records)

```
{
drop table civt_dups;
drop table civt_nodups;
drop table cirt_civt0;
}
```

```
select
  civt.vkey civtvkey,deaths,missing,injured,incident_dt
```

```
from cirt, civt, vidt
```

(Note that in CIVT, the vkey is not unique (in VIDT vkey is unique). Hence  
first get temp table civt\_dups (with duplicates). Then check for number  
of duplicates before grouping by vkey)

where

```
  cirt.mccase=civt.mccase and
  civt.vkey=vidt.vkey and
```

(Jim Law: conversion on July 14, 1994. The following query contracts  
CIRT to cases that are correct (drop mystery and inconsequential  
casualties). ctf\_ind=X are inconsequential cases. command\_endorse and  
command\_cls are mutually exclusive. command\_endorse=X implies that  
case has been reviewed and fwd to dt/HQ for review. command\_cls=X means that  
case is done and does not require review at dt/HQ. command\_endorse=X are  
legit cases and all should be considered. Of the command\_cls=X cases, only  
those with ctf\_ind=null should be considered since ctf\_ind=X implies an  
inconsequential case. )

```
(cirt.command_endorse="X"
or (cirt.command_cls="X" and cirt.ctf_ind is null)) and
```

```
(cirt.deaths>0 or cirt.missing>0 or cirt.injured>0) and
( civt.service="FREIGHT SHIP" or civt.service="PUB. TANKSHIP/BARGE"
or civt.service="TANK SHIP" or
((civt.service="PASSENGER" or civt.service="PASSENGER SHIP") and
  vidt.reg_gt>=100) )
```

```
into temp civt_dups;
```

```
select count(*) num_civtdups
from civt_dups;
```

(This set of statements selects non-duplicate rows in civt\_dup. If group  
by just civtvkey,incident\_dt, get almost same rows as this)

```
select * from civt_dups
group by civtvkey,incident_dt, deaths,missing,injured
into temp civt_nodups;
select count(*) num_civtnodups
from civt_nodups;
```

(group by vkey to attach to the inspections file. Note that numdates now  
gives the number of unique incident dates associated with that vessel)  
select civtvkey, sum(deaths) deaths, sum(missing) missing,  
sum(injured) injured, count(unique incident\_dt) numdates

```
from civt_nodups
group by civtvkey
order by deaths desc, injured desc, numdates desc
into temp cirt_civt0;
```

```
select count(*) num_cirtcivt0
from cirt_civt0;
(drop table cirt_civt0;)
```

**MIPERS2.SQL**

```
(drop table persinsp;)
```

```
select unique vidtcrst.*, cirt_civt0.*  
from vidtcrst, outer cirt_civt0  
where cirt_civt0.civtvkey=vidtcrst.iritvkey  
into temp persinsp;
```

```
select unique iritvkey  
from persinsp  
into temp junk0;  
select count(*) chekpersinsp  
from junk0;  
drop table junk0;
```

```
{Count number of casualty vkeys that Are in vidtcrst}  
select count(*) vidtcrst_keep  
from persinsp  
where civtvkey is not null;
```

```
unload to "/nfs/ttd32/optical/50b/trix.dat/mi.pers" delimiter ","  
select *  
from persinsp;
```

```
{print this out to see the variable names and format for use in ATOG cmd file}  
output to /users/gawande/mipers.out  
select *  
from persinsp  
where reg_gt>100000;
```



# MIPOLL1.SQL

(Be sure to run MIINSP1 and MIINSP2 before these two progs)

{ Here, pollution casualty data is assembled from CIVT and CIRT. CIRT, and CIVT are joined by (unique) Mccase and select out only deep-draft vessels (hence a little use of VIDT). Pollution incidents are constructed from CIRT (which has no vkey) and joined to CIVT to associate them with a Vkey. There are duplicate Vkey records in CIVT (of the 28,821 records, 13,548 have unique Vkey), so we need to choose only unique records)

```
drop table civt_dups;  
drop table civt_nodups;  
drop table cirt_civt0;
```

```
select  
    civt.vkey civtvkey, incident_dt
```

```
from cirt, civt, vidt
```

(Note that using VIDT for the reg\_gt>100 info and hence need Unique in select statement since in CIVT, the vkey is not unique (in VIDT vkey is unique))

where

```
    cirt.mccase=civt.mccase and  
    civt.vkey=vidt.vkey and  
    civt.flag="US" and
```

(Jim Law: conversion on July 14, 1994. The following query contracts CIRT to cases that are correct (drop mystery and inconsequential casualties). ctf\_ind=X are inconsequential cases. command\_endorse and command\_cls are mutually exclusive. command\_endorse=X implies that case has been reviewed and fwd to dt/HQ for review. command\_cls=X means that case is done and does not require review at dt/HQ. command\_endorse=X are legit cases and all should be considered. Of the command\_cls=X cases, only those with ctf\_ind=null should be considered since ctf\_ind=X implies an inconsequential case. )

```
    (cirt.command_endorse="X"  
    or (cirt.command_cls="X" and cirt.ctf_ind is null)) and
```

```
    cirt.mcpd_ind>=1 and  
    (cirt.pol_ind="X" or pri_nature="POLLUTION") and
```

(To select Only BAD cases, unblock this statement)  
(severity in ("MAJOR", "POTENT", "MEDIUM") and)

```
    ( civt.service="FREIGHT SHIP" or civt.service="PUB. TANKSHIP/BARGE"  
    or civt.service="TANK SHIP" or  
    ((civt.service="PASSENGER" or civt.service="PASSENGER SHIP") and  
      vidt.reg_gt>=100) )
```

```
into temp civt_dups;  
select count(*) num_civtdups  
from civt_dups;
```

(This set of statements selects non-duplicate rows in civt\_dup. If group by just civtvkey, incident\_dt, get almost same rows as this)

```
select * from civt_dups  
group by civtvkey, incident_dt  
into temp civt_nodups;  
select count(*) num_civtnodups  
from civt_nodups;
```

(group by vkey to attach to the inspections file. Note that numdates now

```
gives the number of unique incident dates associated with that vessel)
select civtvkey, count(*) poll_incids
from civt_nodups
group by civtvkey
order by poll_incids desc
into temp cirt_civt0;

select count(*) num_cirtcivt0
from cirt_civt0;
(drop table cirt_civt0;)
```

**MIPOLL2.SQL**

```
(drop table pollinsp;)
```

```
select unique vidtcrst.*, cirt_civt0.*  
from vidtcrst, outer cirt_civt0  
where cirt_civt0.civtvkey=vidtcrst.iritvkey  
into temp pollinsp;
```

```
(count number of unique inspection vkeys in final data set)
```

```
select unique iritvkey  
from pollinsp  
into temp junk0;  
select count(*) chekpollinsp  
from junk0;  
drop table junk0;
```

```
(Count number of casualty vkeys that Are in vidtcrst)
```

```
select count(*) vidtcrst_keep  
from pollinsp  
where civtvkey is not null;
```

```
unload to "/nfs/ttd32/optical/50b/trix.dat/mi.pollall" delimiter ","  
select *  
from pollinsp;
```

```
(print this out to see the variable names and format for use in ATOG cmd file)  
output to /users/gawande/mipollall.out
```

```
select *  
from pollinsp  
where reg_gt>100000;
```

## MID3139.SQL

{MI Cases}

{This program After resolution of Level III activity discrimination problem Use of Peggy's mapping, but proportion the hours equally wherever one CRST activity type maps into more than one Level III activity. See also readme.doc file. The way this is accomplished is by using, instead of dummies in d3x variables, we use fractions to proportion the hours.)  
{Another modif to old file is that numd3x is deleted since no longer have dummies from Mike but have the fraction that proportions the hours in the 1-to-many mapping cases. Instead, the number of cases in "d3xcases" serves the same purpose}

{Level III activities. This is a long run. Each of the 9 activities have associated with them hull, machinery, and admin hours. So there are 9 separate crst\_temp0 runs. They are then joined into one file comprising these 3 inspections for each of the 9 activities. This broad file is then joined with casualty data to get the data set for Level III analysis}

{This is Not a duration analysis, just Poisson/Probit/Regression analysis}

{1. Fill in for d3x in 3 places appropriately, to change Level III activity}

{For the hours of inspection equation have (i) num\_def from IRIT and  
(ii) indicators for inspection types for other CRST inspections}

{\*\*\*\*\*HOOURS of INSPECTIONS\*\*\*\*\*}

{First we make a "vkey file" which is the base file with a full list of vkeys (relevant to us) to use for joining the 9 crst files for Level III activities: 31-39}

{vkey file}

```
select
  irit.vkey iritvkey
from irit, crst
where
  irit.micase[1,2]="MI" and
  irit.vkey[1,2]="VN" and
  crst.case[1,2]="MI" and
  crst.case[3,4]>="89" and
  crst.case=irit.micase
```

```
group by irit.vkey
into temp crst_vkey;
```

```
select count(*) count_crstvkey
from crst_vkey;
```

{Now there are 9 hours of inspection files, one for each Level III activity, 31-39.}

{d31}

```
select
  irit.vkey d31vkey, count(*) d31cases,
  sum(hr_hull*d31) d31hhr, sum(hr_mach*d31) d31mhr, sum(hr_admin*d31) d31ahr,
  sum(irit.num_def) d31_ndef,
```

{CRST types of inspections: only Major ones to show these Level III activities are a sub-part of these)

```
sum(crst.dannual) d31ann, sum(crst.dreinsp) d31re, sum(crst.dadmin) d31ad,
sum(crst.dhull) d31h, sum(crst.dconstr) d31con, sum(crst.dcert) d31coi,
sum(crst.dinit) d31ini
```

from crst, irit

{Note the date >= 89. This is since only post-91 casualties are being considered. Hence choose a year with which I am comfortable (years to failure is not badly measured so that it affects the results. can try with other years e.g. 90, 88 as well).}

{Important Note: If the analysis is by vkey And iritdate, then Only consider inspections after 1/91}

where

```
{(since considering activity III.x (fill in x appropriately))
crst.d31>0 and
```

```
irit.micase[1,2]="MI" and
irit.vkey[1,2]="VN" and
crst.case[1,2]="MI" and
crst.case[3,4]>="89" and
crst.case=irit.micase
```

group by irit.vkey  
into temp crst\_d31;

select count(\*) countcrst\_d31  
from crst\_d31;

{d32}  
select

```
irit.vkey d32vkey, count(*) d32cases,
sum(hr_hull*d32) d32hhr, sum(hr_mach*d32) d32mhr, sum(hr_admin*d32) d32ahr,
sum(irit.num_def) d32_ndef,
```

{CRST types of inspections: only Major ones to show these Level III activities are a sub-part of these)

```
sum(crst.dannual) d32ann, sum(crst.dreinsp) d32re, sum(crst.dadmin) d32ad,
sum(crst.dhull) d32h, sum(crst.dconstr) d32con, sum(crst.dcert) d32coi,
sum(crst.dinit) d32ini
```

from crst, irit

{Note the date >= 89. This is since only post-91 casualties are being considered. Hence choose a year with which I am comfortable (years to failure is not badly measured so that it affects the results. can try with other years e.g. 90, 88 as well).}

{Important Note: If the analysis is by vkey And iritdate, then Only consider inspections after 1/91}

where

```
{(since considering activity III.x (fill in x appropriately))
crst.d32>0 and
```

```
irit.micase[1,2]="MI" and
irit.vkey[1,2]="VN" and
crst.case[1,2]="MI" and
crst.case[3,4]>="89" and
crst.case=irit.micase
```

group by irit.vkey  
into temp crst\_d32;

```
select count(*) countcrst_d32
from crst_d32;
```

```
{d33}
select
  irit.vkey d33vkey, count(*) d33cases,
  sum(hr_hull*d33) d33hhr, sum(hr_mach*d33) d33mhr, sum(hr_admin*d33) d33ahr,
  sum(irit.num_def) d33_ndef,
  (CRST types of inspections: only Major ones to show these Level III activities
   are a sub-part of these)
  sum(crst.dannual) d33ann, sum(crst.dreinsp) d33re, sum(crst.dadmin) d33ad,
  sum(crst.dhull) d33h, sum(crst.dconstr) d33con, sum(crst.dcert) d33coi,
  sum(crst.dinit) d33ini
```

```
from crst, irit
```

(Note the date >= 89. This is since only post-91 casualties are being considered. Hence choose a year with which I am comfortable (years to failure is not badly measured so that it affects the results. can try with other years e.g. 90, 88 as well).)

(Important Note: If the analysis is by vkey And iritdate, then Only consider inspections after 1/91)

where

```
(since considering activity III.x (fill in x appropriately))
crst.d33>0 and
```

```
  irit.micase[1,2]="MI" and
  irit.vkey[1,2]="VN" and
  crst.case[1,2]="MI" and
  crst.case[3,4]>="89" and
  crst.case=irit.micase
```

```
group by irit.vkey
into temp crst_d33;
```

```
select count(*) countcrst_d33
from crst_d33;
```

```
{d34}
select
  irit.vkey d34vkey, count(*) d34cases,
  sum(hr_hull*d34) d34hhr, sum(hr_mach*d34) d34mhr, sum(hr_admin*d34) d34ahr,
  sum(irit.num_def) d34_ndef,
  (CRST types of inspections: only Major ones to show these Level III activities
   are a sub-part of these)
  sum(crst.dannual) d34ann, sum(crst.dreinsp) d34re, sum(crst.dadmin) d34ad,
  sum(crst.dhull) d34h, sum(crst.dconstr) d34con, sum(crst.dcert) d34coi,
  sum(crst.dinit) d34ini
```

```
from crst, irit
```

(Note the date >= 89. This is since only post-91 casualties are being considered. Hence choose a year with which I am comfortable (years to failure is not badly measured so that it affects the results. can try with other years e.g. 90, 88 as well).)

(Important Note: If the analysis is by vkey And iritdate, then Only consider inspections after 1/91)

where

```
(since considering activity III.x (fill in x appropriately))
```

```

crst.d34>0 and

irit.micase[1,2]="MI" and
irit.vkey[1,2]="VN" and
crst.case[1,2]="MI" and
crst.case[3,4]>="89" and
crst.case=irit.micase

group by irit.vkey
into temp crst_d34;

select count(*) countcrst_d34
from crst_d34;

(d35)
select
  irit.vkey d35vkey, count(*) d35cases,
  sum(hr_hull*d35) d35hhr, sum(hr_mach*d35) d35mhr, sum(hr_admin*d35) d35ahr,
  sum(irit.num_def) d35_ndef,
  (CRST types of inspections: only Major ones to show these Level III activities
   are a sub-part of these)
  sum(crst.dannual) d35ann, sum(crst.dreinsp) d35re, sum(crst.dadmin) d35ad,
  sum(crst.dhull) d35h, sum(crst.dconstr) d35con, sum(crst.dcert) d35coi,
  sum(crst.dinit) d35ini

from crst, irit

(Note the date >= 89. This is since only post-91 casualties are being
considered. Hence choose a year with which I am comfortable (years to
failure is not badly measured so that it affects the results. can try
with other years e.g. 90, 88 as well).)
(Important Note: If the analysis is by vkey And iritdate, then Only
consider inspections after 1/91)
where
  (since considering activity III.x (fill in x appropriately))
  crst.d35>0 and

  irit.micase[1,2]="MI" and
  irit.vkey[1,2]="VN" and
  crst.case[1,2]="MI" and
  crst.case[3,4]>="89" and
  crst.case=irit.micase

group by irit.vkey
into temp crst_d35;

select count(*) countcrst_d35
from crst_d35;

(d36)
select
  irit.vkey d36vkey, count(*) d36cases,
  sum(hr_hull*d36) d36hhr, sum(hr_mach*d36) d36mhr, sum(hr_admin*d36) d36ahr,
  sum(irit.num_def) d36_ndef,
  (CRST types of inspections: only Major ones to show these Level III activities
   are a sub-part of these)
  sum(crst.dannual) d36ann, sum(crst.dreinsp) d36re, sum(crst.dadmin) d36ad,
  sum(crst.dhull) d36h, sum(crst.dconstr) d36con, sum(crst.dcert) d36coi,
  sum(crst.dinit) d36ini

```

```
from crst, irit
```

(Note the date >= 89. This is since only post-91 casualties are being considered. Hence choose a year with which I am comfortable (years to failure is not badly measured so that it affects the results. can try with other years e.g. 90, 88 as well).)

(Important Note: If the analysis is by vkey And iritdate, then Only consider inspections after 1/91)

```
where
```

```
{since considering activity III.x (fill in x appropriately)}  
crst.d36>0 and
```

```
irit.micase[1,2]="MI" and  
irit.vkey[1,2]="VN" and  
crst.case[1,2]="MI" and  
crst.case[3,4]>="89" and  
crst.case=irit.micase
```

```
group by irit.vkey  
into temp crst_d36;
```

```
select count(*) countcrst_d36  
from crst_d36;
```

```
(d37)
```

```
select
```

```
irit.vkey d37vkey, count(*) d37cases,  
sum(hr_hull*d37) d37hhr,sum(hr_mach*d37) d37mhr,sum(hr_admin*d37) d37ahr,  
sum(irit.num_def) d37_ndef,
```

(CRST types of inspections: only Major ones to show these Level III activities are a sub-part of these)

```
sum(crst.dannual) d37ann, sum(crst.dreinsp) d37re, sum(crst.dadmin) d37ad,  
sum(crst.dhull) d37h, sum(crst.dconstr) d37con,sum(crst.dcert) d37coi,  
sum(crst.dinit) d37ini
```

```
from crst, irit
```

(Note the date >= 89. This is since only post-91 casualties are being considered. Hence choose a year with which I am comfortable (years to failure is not badly measured so that it affects the results. can try with other years e.g. 90, 88 as well).)

(Important Note: If the analysis is by vkey And iritdate, then Only consider inspections after 1/91)

```
where
```

```
{since considering activity III.x (fill in x appropriately)}  
crst.d37>0 and
```

```
irit.micase[1,2]="MI" and  
irit.vkey[1,2]="VN" and  
crst.case[1,2]="MI" and  
crst.case[3,4]>="89" and  
crst.case=irit.micase
```

```
group by irit.vkey  
into temp crst_d37;
```

```
select count(*) countcrst_d37  
from crst_d37;
```



```

(d38)
select
  irit.vkey d38vkey, count(*) d38cases,
  sum(hr_hull*d38) d38hhr, sum(hr_mach*d38) d38mhr, sum(hr_admin*d38) d38ahr,
  sum(irit.num_def) d38_ndef,
  (CRST types of inspections: only Major ones to show these Level III activities
   are a sub-part of these)
  sum(crst.dannual) d38ann, sum(crst.dreinsp) d38re, sum(crst.dadmin) d38ad,
  sum(crst.dhull) d38h, sum(crst.dconstr) d38con, sum(crst.dcert) d38coi,
  sum(crst.dinit) d38ini

```

from crst, irit

(Note the date >= 89. This is since only post-91 casualties are being considered. Hence choose a year with which I am comfortable (years to failure is not badly measured so that it affects the results. can try with other years e.g. 90, 88 as well).)

(Important Note: If the analysis is by vkey And iritdate, then Only consider inspections after 1/91)

where

```

  (since considering activity III.x (fill in x appropriately))
  crst.d38>0 and

```

```

  irit.micase[1,2]="MI" and
  irit.vkey[1,2]="VN" and
  crst.case[1,2]="MI" and
  crst.case[3,4]>="89" and
  crst.case=irit.micase

```

group by irit.vkey  
into temp crst\_d38;

```

select count(*) counterst_d38
from crst_d38;

```

```

(d39)
select
  irit.vkey d39vkey, count(*) d39cases,
  sum(hr_hull*d39) d39hhr, sum(hr_mach*d39) d39mhr, sum(hr_admin*d39) d39ahr,
  sum(irit.num_def) d39_ndef,
  (CRST types of inspections: only Major ones to show these Level III activities
   are a sub-part of these)
  sum(crst.dannual) d39ann, sum(crst.dreinsp) d39re, sum(crst.dadmin) d39ad,
  sum(crst.dhull) d39h, sum(crst.dconstr) d39con, sum(crst.dcert) d39coi,
  sum(crst.dinit) d39ini

```

from crst, irit

(Note the date >= 89. This is since only post-91 casualties are being considered. Hence choose a year with which I am comfortable (years to failure is not badly measured so that it affects the results. can try with other years e.g. 90, 88 as well).)

(Important Note: If the analysis is by vkey And iritdate, then Only consider inspections after 1/91)

where

```

  (since considering activity III.x (fill in x appropriately))
  crst.d39>0 and

```

```

  irit.micase[1,2]="MI" and
  irit.vkey[1,2]="VN" and

```

```

        crst.case[1,2]="MI" and
        crst.case[3,4]>="89" and
        crst.case=irit.micase

group by irit.vkey
into temp crst_d39;

select count(*) countcrst_d39
from crst_d39;

{*****
  Join the 9 crst_d3x files into a big file: crst_temp0
*****}

select crst_vkey.iritvkey,
crst_d31.*,crst_d32.*,crst_d33.*,crst_d34.*,crst_d35.*,crst_d36.*,
crst_d37.*,crst_d38.*,crst_d39.*
from      crst_vkey,Outer crst_d31,Outer crst_d32,Outer crst_d33,
          Outer crst_d34,Outer crst_d35,Outer crst_d36,
          Outer crst_d37,Outer crst_d38,Outer crst_d39
where     crst_vkey.iritvkey=crst_d31.d31vkey and
          crst_vkey.iritvkey=crst_d32.d32vkey and
          crst_vkey.iritvkey=crst_d33.d33vkey and
          crst_vkey.iritvkey=crst_d34.d34vkey and
          crst_vkey.iritvkey=crst_d35.d35vkey and
          crst_vkey.iritvkey=crst_d36.d36vkey and
          crst_vkey.iritvkey=crst_d37.d37vkey and
          crst_vkey.iritvkey=crst_d38.d38vkey and
          crst_vkey.iritvkey=crst_d39.d39vkey
into temp crst_temp0;

{*****
Join the Inspections file (big one) with vessel characteristics in VIDT
*****}

(This file joins CRST_TEMP0 (agg hours by vkey) to VIDT to identify the foll:
 service, flag, reg_gt, bld_yr, route.)

(drop table vidtcrst;)

select
  crst_temp0.*,
  vidt.service service, vidt.flag flag, vidt.reg_gt reg_gt,
  year(vidt.bld_dt) yearbld, vidt.route route,
  (These have many nulls and are used only for model of inspection if adequate)
  vidt.dblside_typ, vidt.dblbott_typ, vidt.prop_typ, vidt.design, vidt.hull_mat

from crst_temp0, vidt
where
  crst_temp0.iritvkey=vidt.vkey and
  (
    vidt.service="FREIGHT SHIP" or vidt.service="PUB. TANKSHIP/BARGE" or
    vidt.service="TANK SHIP" or ((vidt.service="PASSENGER" or
    vidt.service="PASSENGER SHIP") and vidt.reg_gt>=100)
  ) and
  vidt.flag="US"
into temp vidtcrst;

select count(*) num_vidtcrst

```

from vidtcrst;

```
{*****
      Personnel Casualties: Construct cirt_civt0, join with
      Inspections, and unload to disk
*****}
```

{No incident date. But since MINMOD, post-1991(few 91s mostly 92,93)}

{ Here, casualty data is assembled from CIVT and CIRT.  
CIRT, and CIVT are joined by (unique) Mccase and select out only  
deep-draft vessels (hence a little use of VIDT). Personnel casualties are  
constructed from CIRT (which has no vkey) and joined to CIVT to associate  
them with a Vkey. There are duplicate Vkey records in CIVT (of the 28,821  
records, 13,548 have unique Vkey), so we need to choose only unique records)

```
{
drop table civt_dups;
drop table civt_nodups;
drop table cirt_civt0;
}
```

```
select
  civt.vkey civtvkey,deaths,missing,injured,incident_dt
```

from cirt, civt, vidt

{Note that in CIVT, the vkey is not unique (in VIDT vkey is unique). Hence  
first get temp table civt\_dups (with duplicates). Then check for number  
of duplicates before grouping by vkey}

where

```
cirt.mccase=civt.mccase and
civt.vkey=vidt.vkey and
```

{Jim Law: conversion on July 14, 1994. The following query contracts  
CIRT to cases that are correct (drop mystery and inconsequential  
casualties). ctf\_ind=X are inconsequential cases. command\_endorse and  
command\_cls are mutually exclusive. command\_endorse=X implies that  
case has been reviewed and fwd to dt/HQ for review. command\_cls=X means that  
case is done and does not require review at dt/HQ. command\_endorse=X are  
legit cases and all should be considered. Of the command\_cls=X cases, only  
those with ctf\_ind=null should be considered since ctf\_ind=X implies an  
inconsequential case. }

```
(cirt.command_endorse="X"
or (cirt.command_cls="X" and cirt.ctf_ind is null)) and
```

```
(cirt.deaths>0 or cirt.missing>0 or cirt.injured>0) and
( civt.service="FREIGHT SHIP" or civt.service="PUB. TANKSHIP/BARGE"
or civt.service="TANK SHIP" or
((civt.service="PASSENGER" or civt.service="PASSENGER SHIP") and
vidt.reg_gt>=100) )
```

into temp civt\_dups;

```
select count(*) num_civtdups
from civt_dups;
```

{This set of statements selects non-duplicate rows in civt\_dup. If group  
by just civtvkey,incident\_dt, get almost same rows as this}

```
select * from civt_dups
```

```
group by civtvkey,incident_dt, deaths,missing,injured
into temp civt_nodups;
```

```
select count(*) num_civtnodups
from civt_nodups;
```

```

(group by vkey to attach to the inspections file. Note that numdates now
 gives the number of unique incident dates associated with that vessel)
select civtvkey, sum(deaths) deaths, sum(missing) missing,
      sum(injured) injured, count(unique incident_dt) numdates

```

```

from civt_nodups
group by civtvkey
order by deaths desc, injured desc, numdates desc
into temp cirt_civt0;

```

```

select count(*) num_cirtcivt0
from cirt_civt0;
(drop table cirt_civt0;)

```

```

(drop table persinsp;)

```

```

select unique vidtcrst.*, cirt_civt0.*
from vidtcrst, outer cirt_civt0
where cirt_civt0.civtvkey=vidtcrst.iritvkey
into temp persinsp;

```

```

select unique iritvkey
from persinsp
into temp junk0;
select count(*) chekpersinsp
from junk0;
drop table junk0;

```

```

(Count number of casualty vkeys that Are in vidtcrst)
select count(*) vidtcrst_keep
from persinsp
where civtvkey is not null;

```

```

unload to "/nfs/ttd32/optical/50b/trix.dat/mi_d3139.pers" delimiter ","
select *
from persinsp;

```

```

select      count(*) numrows, sum(d31hhr) d31hhr, sum(d31mhr) d31mhr,
            sum(d31ahr) d31ahr
from persinsp;
select      count(*) numrows, sum(d39hhr) d39hhr, sum(d39mhr) d39mhr,
            sum(d39ahr) d39ahr
from persinsp;

```

```

(print this out for var names to an output file since need also to print for
 pollution data set)
output to /users2/gawande/mid3139_pers.out
select *
from persinsp
where reg_gt>100000;

```

```

(*****
      Pollution Casualties: Construct cirt_civt0, join with
      Inspections, and unload to disk
*****)

```

```

( Here, pollution casualty data is assembled from CIVT and CIRT.
CIRT, and CIVT are joined by (unique) Mccase and select out only

```

deep-draft vessels (hence a little use of VIDT). Pollution incidents are constructed from CIRT (which has no vkey) and joined to CIVT to associate them with a Vkey. There are duplicate Vkey records in CIVT (of the 28,821 records, 13,548 have unique Vkey), so we need to choose only unique records)

```
drop table civt_dups;
drop table civt_nodups;
drop table cirt_civt0;
```

```
select
    civt.vkey civtvkey, incident_dt
```

```
from cirt, civt, vidt
```

(Note that using VIDT for the reg\_gt>100 info and hence need Unique in select statement since in CIVT, the vkey is not unique (in VIDT vkey is unique))

where

```
    cirt.mccase=civt.mccase and
    civt.vkey=vidt.vkey and
    civt.flag="US" and
```

{Jim Law: conversion on July 14, 1994. The following query contracts CIRT to cases that are correct (drop mystery and inconsequential casualties). ctf\_ind=X are inconsequential cases. command\_endorse and command\_cls are mutually exclusive. command\_endorse=X implies that case has been reviewed and fwd to dt/HQ for review. command\_cls=X means that case is done and does not require review at dt/HQ. command\_endorse=X are legit cases and all should be considered. Of the command\_cls=X cases, only those with ctf\_ind=null should be considered since ctf\_ind=X implies an inconsequential case. }

```
(cirt.command_endorse="X"
or (cirt.command_cls="X" and cirt.ctf_ind is null)) and
```

```
cirt.mcpd_ind>=1 and
(cirt.pol_ind="X" or pri_nature="POLLUTION") and
```

(To select Only BAD cases, unblock this statement)  
(severity in ("MAJOR","POTENT","MEDIUM") and)

```
( civt.service="FREIGHT SHIP" or civt.service="PUB. TANKSHIP/BARGE"
or civt.service="TANK SHIP" or
((civt.service="PASSENGER" or civt.service="PASSENGER SHIP") and
vidt.reg_gt>=100) )
```

```
into temp civt_dups;
select count(*) num_civtdups
from civt_dups;
```

(This set of statements selects non-duplicate rows in civt\_dup. If group by just civtvkey,incident\_dt, get almost same rows as this)

```
select * from civt_dups
group by civtvkey,incident_dt
into temp civt_nodups;
select count(*) num_civtnodups
from civt_nodups;
```

(group by vkey to attach to the inspections file. Note that numdates now gives the number of unique incident dates associated with that vessel)

```
select civtvkey, count(*) poll_incids
from civt_nodups
group by civtvkey
order by poll_incids desc
```

```

into temp cirt_civt0;

select count(*) num_cirtcivt0
from cirt_civt0;
(drop table cirt_civt0;)

(drop table pollinsp;)

select unique vidtcrst.*, cirt_civt0.*
from vidtcrst, outer cirt_civt0
where cirt_civt0.civtvkey=vidtcrst.iritvkey
into temp pollinsp;

(count number of unique inspection vkeys in final data set)
select unique iritvkey
from pollinsp
into temp junk0;
select count(*) chekpollinsp
from junk0;
drop table junk0;

(Count number of casualty vkeys that Are in vidtcrst)
select count(*) vidtcrst_keep
from pollinsp
where civtvkey is not null;

unload to "/nfs/ttd32/optical/50b/trix.dat/mi_d3139.pollall" delimiter ","
select *
from pollinsp;

select      count(*) numrows, sum(d31hhr) d31hhr, sum(d31mhr) d31mhr,
            sum(d31ahr) d31ahr
from pollinsp;
select      count(*) numrows, sum(d39hhr) d39hhr, sum(d39mhr) d39mhr,
            sum(d39ahr) d39ahr
from pollinsp;

(print this out for var names to an output file )
output to /users2/gawande/mid3139_poll.out
select *
from pollinsp
where reg_gt>100000;

```

**PSINSP1.SQL**

{This joins BRST and AVST by case and aggregates BRST hours by AVST's vkey}

{drop table brst\_temp0}

```
select
  avst.vkey avstvkey,
  count(*) numcases, sum(hr_reg) reg_hr, sum(hr_res) res_hr,
  sum(hr_boat) boat_hr, sum(hr_air) air_hr,
  sum(hr_regadmin) admin_hr, sum(hr_regtv1) travel_hr,
  sum(hr_other) other_hr,
  sum(num_def) avst_def, sum(num_act) avst_act,
  {Level II and III Dummies from Mike based on Peggy Thurber's mapping
  Here only II.B activities since only PS activities}
  sum(d2b1) numd2b1, sum(d2b2) numd2b2, sum(d2b3) numd2b3,
  {Note that 35, 36, and 38 for US Flag only needed, but am including it here}
  sum(d31) numd31, sum(d32) numd32, sum(d33) numd33, sum(d34) numd34,
  sum(d35) numd35, sum(d36) numd36, sum(d37) numd37, sum(d38) numd38,
  sum(d39) numd39
from brst, avst

{Note the date >= 89. This is since only post-91 casualties are being
considered. Hence choose a year with which I am comfortable (years to
failure is not badly measured so that it affects the results. can try
with other years e.g. 90, 88 as well).}
where
  brst.pscase[3,4]>="89" and
  brst.pscase=avst.pscase

group by avst.vkey
into temp brst_temp0;

select count(*) countbrst_temp0
from brst_temp0;
```

**PSINSP2.SQL**

(This file joins BRST\_TEMP0 (agg hours by vkey) to VIDT to identify the foll:  
service, flag, reg\_gt, bld\_yr, route.)

(drop table vidtbrst;)

```
select
  brst_temp0.*,
  vidt.service vidtservice, vidt.flag vidtflag, vidt.reg_gt reg_gt,
  year(vidt.bld_dt) yearbld, vidt.route route,
  (These have many nulls and are used only for model of inspection if adequate)
  vidt.dblside_typ, vidt.dblbott_typ, vidt.prop_typ, vidt.design, vidt.hull_mat
from brst_temp0, vidt
where
  brst_temp0.avstvkey=vidt.vkey and
  (
    (vidt.flag="US" and (
      vidt.service="FREIGHT SHIP" or vidt.service="PUB. TANKSHIP/BARGE" or
      vidt.service="TANK SHIP" or ((vidt.service="PASSENGER" or
      vidt.service="PASSENGER SHIP") and vidt.reg_gt>=100) ) )
    or
    (vidt.flag not in ("US") and (
      vidt.service="FREIGHT SHIP" or vidt.service="PUB. TANKSHIP/BARGE" or
      vidt.service="TANK SHIP" or vidt.service="PASSENGER" or
      vidt.service="PASSENGER SHIP" ) )
  )
into temp vidtbrst;

select count(*)
from vidtbrst;
```



# PSPERS1.SQL

{Be sure to run PSINSP1 and PSINSP2 before these two progs}  
{No incident date. But since MINMOD, post-1991(few 91s mostly 92,93)}

{ Here, casualty data is assembled from CIVT and CIRT.  
CIRT, and CIVT are joined by (unique) Mccase and select out only  
deep-draft vessels (hence a little use of VIDT). Personnel casualties are  
constructed from CIRT (which has no vkey) and joined to CIVT to associate  
them with a Vkey. There are duplicate Vkey records in CIVT (of the 28,821  
records, 13,548 have unique Vkey), so we need to choose only unique records)

```
{
drop table civt_dups;
drop table civt_nodups;
drop table cirt_civt0;
}
```

```
select
    civt.vkey civtvkey,deaths,missing,injured,incident_dt
```

```
from cirt, civt, vidt
```

{Note that in CIVT, the vkey is not unique (in VIDT vkey is unique). Hence  
first get temp table civt\_dups (with duplicates). Then check for number  
of duplicates before grouping by vkey}

```
where
    cirt.mccase=civt.mccase and
    civt.vkey=vidt.vkey and
```

{Jim Law: conversion on July 14, 1994. The following query contracts  
CIRT to cases that are correct (drop mystery and inconsequential  
casualties). ctf\_ind=X are inconsequential cases. command\_endorse and  
command\_cls are mutually exclusive. command\_endorse=X implies that  
case has been reviewed and fwd to dt/HQ for review. command\_cls=X means that  
case is done and does not require review at dt/HQ. command\_endorse=X are  
legit cases and all should be considered. Of the command\_cls=X cases, only  
those with ctf\_ind=null should be considered since ctf\_ind=X implies an  
inconsequential case. }

```
(cirt.command_endorse="X"
or (cirt.command_cls="X" and cirt.ctf_ind is null)) and
```

```
(cirt.deaths>0 or cirt.missing>0 or cirt.injured>0) and
( civt.service="FREIGHT SHIP" or civt.service="PUB. TANKSHIP/BARGE"
or civt.service="TANK SHIP" or
((civt.service="PASSENGER" or civt.service="PASSENGER SHIP") and
vidt.reg_gt>=100) )
```

```
into temp civt_dups;
select count(*) num_civtdups
from civt_dups;
```

{This set of statements selects non-duplicate rows in civt\_dup. If group  
by just civtvkey,incident\_dt, get almost same rows as this}

```
select * from civt_dups
group by civtvkey,incident_dt, deaths,missing,injured
into temp civt_nodups;
select count(*) num_civtnodups
from civt_nodups;
```

{group by vkey to attach to the inspections file. Note that numdates now  
gives the number of unique incident dates associated with that vessel}  
select civtvkey, sum(deaths) deaths, sum(missing) missing,  
sum(injured) injured, count(unique incident\_dt) numdates

```
from civt_nodups  
group by civtvkey  
order by deaths desc, injured desc, numdates desc  
into temp cirt_civt0;
```

```
select count(*) num_cirtcivt0  
from cirt_civt0;  
{drop table cirt_civt0;}
```

**PSPERS2.SQL**

```
(drop table persinsp;)
```

```
select unique vidtbrst.*, cirt_civt0.*  
from vidtbrst, outer cirt_civt0  
where cirt_civt0.civtvkey=vidtbrst.avstvkey  
into temp persinsp;
```

```
select unique avstvkey  
from persinsp  
into temp junk0;  
select count(*) chekpersinsp  
from junk0;  
drop table junk0;
```

```
(Count number of casualty vkeys that Are in vidtbrst)  
select count(*) vidtbrst_keep  
from persinsp  
where civtvkey is not null;
```

```
unload to '/nfs/ttd32/optical/50b/trix.dat/ps.pers' delimiter ","  
select *  
from persinsp;
```

```
(print this out for var names to an output file)  
output to /users/gawande/pspers.out  
select *  
from persinsp  
where reg_gt>100000;
```

**PSPERS3.SQL**

{Check to see if numbers make sense}  
select count(\*), avg(avst\_def) avg\_avstdef, sum(avst\_def) sum\_avstdef,  
avg(avst\_act) avg\_avstact, sum(avst\_act) sum\_avstact,  
avg(numcases) avg\_numcases, sum(numcases) sum\_numcases  
from persinsp

## PSPOLL1.SQL

{US and Foreign flag casualties. Deep draft but includes Passenger<100}  
(Be sure to run PSINSP1 and PSINSP2 before these two progs)

{ Here, pollution casualty data is assembled from CIVT and CIRT.  
CIRT, and CIVT are joined by (unique) Mccase and select out only  
deep-draft vessels (hence a little use of VIDT). Pollution incidents are  
constructed from CIRT (which has no vkey) and joined to CIVT to associate  
them with a Vkey. There are duplicate Vkey records in CIVT (of the 28,821  
records, 13,548 have unique Vkey), so we need to choose only unique records)

```
drop table civt_dups;  
drop table civt_nodups;  
drop table cirt_civt0;
```

```
select  
    civt.vkey civtvkey, incident_dt
```

```
from cirt, civt, vidt
```

(Note that using VIDT for the reg\_gt>100 info and hence need Unique in select  
statement since in CIVT, the vkey is not unique (in VIDT vkey is unique))

```
where  
    cirt.mccase=civt.mccase and  
    civt.vkey=vidt.vkey and
```

(Jim Law: conversion on July 14, 1994. The following query contracts  
CIRT to cases that are correct (drop mystery and inconsequential  
casualties). ctf\_ind=X are inconsequential cases. command\_endorse and  
command\_cls are mutually exclusive. command\_endorse=X implies that  
case has been reviewed and fwd to dt/HQ for review. command\_cls=X means that  
case is done and does not require review at dt/HQ. command\_endorse=X are  
legit cases and all should be considered. Of the command\_cls=X cases, only  
those with ctf\_ind=null should be considered since ctf\_ind=X implies an  
inconsequential case. )

```
(cirt.command_endorse="X"  
or (cirt.command_cls="X" and cirt.ctf_ind is null)) and
```

```
cirt.mcpd_ind>=1 and  
(cirt.pol_ind="X" or pri_nature="POLLUTION") and
```

(To select Only BAD cases, unblock this statement)  
(severity in ("MAJOR","POTENT","MEDIUM") and)

```
( civt.service="FREIGHT SHIP" or civt.service="PUB. TANKSHIP/BARGE"  
or civt.service="TANK SHIP" or  
civt.service="PASSENGER" or civt.service="PASSENGER SHIP")
```

```
into temp civt_dups;  
select count(*) num_civtdups  
from civt_dups;
```

(This set of statements selects non-duplicate rows in civt\_dup. If group  
by just civtvkey,incident\_dt, get almost same rows as this)

```
select * from civt_dups  
group by civtvkey,incident_dt  
into temp civt_nodups;  
select count(*) num_civtnodups  
from civt_nodups;
```

(group by vkey to attach to the inspections file. Note that numdates now  
gives the number of unique incident dates associated with that vessel)  
select civtvkey, count(\*) poll\_incids  
from civt\_nodups  
group by civtvkey  
order by poll\_incids desc  
into temp cirt\_civt0;  
  
select count(\*) num\_cirtcivt0  
from cirt\_civt0;  
(drop table cirt\_civt0;)

**PSPOLL2.SQL**

(drop table pollinsp;)

```
select unique vidtbrst.*, cirt_civt0.*
from vidtbrst, outer cirt_civt0
where cirt_civt0.civtvkey=vidtbrst.avstvkey
into temp pollinsp;
```

(count number of unique inspection vkeys in final data set)

```
select unique avstvkey
from pollinsp
into temp junk0;
select count(*) chekpollinsp
from junk0;
drop table junk0;
```

(Count number of casualty vkeys that Are in vidtcrst)

```
select count(*) vidtbrst_keep
from pollinsp
where civtvkey is not null;
```

unload to "/nfs/ttd32/optical/50b/trix.dat/ps.pollall" delimiter ","

```
select *
from pollinsp;
```

(print this out for var names to an output file)

output to /users/gawande/pspollall.out

```
select *
from pollinsp
where reg_gt>100000;
```

PROGRAMS FOR DURATION DATA SETS



# DUR\_A1.SQL

(MI Cases)

(After conversation with Wyman Briggs on 18 July, 1994: Use IRIT indicators for inspection types for Level II.A.1-3 activities, and use Peggy Thurber's mapping (grouped by Mike into d31-d39 indicators) for Level III activities)

- (1. Change inspection from IRIT appropriately: cert\_inspect for COI, reinspect for Reinspection, and hull for hull exam.
2. Change the Unload to file else WILL WRITE OVER)

(Only post 1991 (incl) inspections since duration since last inspection to casualty, and first casualty in Minmod is 02/91)

(  
Duration data: The idea is as follows.  
The lhs variable is duration from the Last inspection till date of casualty.  
Analysis will be by Level II activities: (i) 3 MI activities: COI, Annual Vessel Reinspection, Hull Exam, and (ii) 3 PS activities: Annual Foreign Freight Exam, Annual Foreign Tanker Vessel Exam, Annual Foreign Passenger.  
The same vessel inspected (using same activity) twice is treated as two different vessels, and as two observations (i.e. Hence large data set.)  
If the vessel has no casualty after an activity, the lhs takes the value of duration till the next activity of the same type. The problem is that  
(a) casualty may not have anything to do with that activity. For, example pri\_nature in CIRT may possess such info. This can (should?) be incorporated by attributing only those casualties to that activity. This requires that pri\_nature should be mapped into Level II activities. This mapping will probably be one(pri\_nature) to many(Level II activities).  
(b) should we be taking duration till next activity of the same type, or any activity. If we take into consideration pri\_nature and ascribe only the "casualties connected with that activity" in computing the lhs variable, then we take duration till next activity of the same type if no casualty in the meantime. Else not so easy, since casualty may be of a nature attributable to another kind of activity. Even if pri\_nature used, probably not too easy, since mapping is probably one(pri\_nature) to many or all(Level II activity). So problem still unanswered.  
Solution: We take the simple road. All casualties, not just those attributable directly to the Level II activity is considered. This is OK since anyway a large range of inspections map into a Level II activity, and Many pri\_natures map into this set of inspections. Also since some vessels are subject to a Level II activity sooner than others, rather than take the duration between two inspections, in the event of No casualty we take the duration between the inspection date and 1/1/1995. The problem is that the closer the inspection to that date, the shorter the duration recorded. But mainly, it is convenient, the duration so computed does not exceed the duration where there Are casualties, and since the last inspection was in 12/1993, this simplification is not expected to qualitatively change any results.

rhs variable is still number of hours devoted to that activity etc. The main difference is the age of the vessel, which is to be computed at the time of casualty, or at the time of next inspection if no casualty.

(For the hours of inspection equation have (i) num\_def from IRIT and (ii) indicators for inspection types for other CRST inspections)

(\*\*\*\*\*HOURS of INSPECTIONS\*\*\*\*\*)

select  
irit.vkey iritvkey, irit.dt iritdate,

```

count(*) numcases, sum(hr_hull) hull_hr, sum(hr_mach) mach_hr,
sum(hr_train) train_hr, sum(hr_extra) extra_hr, sum(hr_textra) textra_hr,
sum(hr_admin) admin_hr, sum(hr_travel) travel_hr, sum(hr_ttravel) ttravel_hr,
sum(hr_other) other_hr,
sum(irit.num_def) num_def,
(Sum of Mike's dummies (based on Peggy's mapping) gives the total of
sub-inspections for that Level II activity on that date)
sum(d2a1) numd2a1, sum(d2a2) numd2a2, sum(d2a3) numd2a3,
(CRST types of inspections: indicators)
sum(crst.dannual) crstannual, sum(crst.dreinsp) crstreinsp,
sum(crst.dadmin) crstadmin, sum(crst.dhull) crsthull, sum(crst.dcoc) crstcoc,
sum(crst.dconstr) crstconstr, sum(crst.dcert) crstcert,
sum(crst.dinit) crstinit, sum(crst.dmach) crstmach, sum(crst.ddeficit) crstdef,
sum(crst.dother) crstother, sum(crst.drest) crstrest
from crst, irit

```

(Since first casualty case is 02/91 and duration is from last inspection, only inspections after 1991 are considered. This is unlike the Poisson stuff where inspections after 1989 are considered)

where

```

(activity II.A.1=COI)
irit.cert_inspect="X" and

irit.micase[1,2]="MI" and
irit.vkey[1,2]="VN" and
crst.case[1,2]="MI" and
(since first casualty case is 02/91 and duration is from last inspec)
crst.case[3,4]>="91" and
crst.case=irit.micase

```

```

group by irit.vkey, irit.dt
into temp crst_temp0;

```

```

select count(*) countcrst_temp0
from crst_temp0;

```

(This file joins CRST\_TEMP0 (agg hours by vkey) to VIDT to identify the foll: service, flag, reg\_gt, bld\_yr, route.)

```

(drop table vidtcrst;)

```

```

select
crst_temp0.*,
vidt.service service, vidt.flag flag, vidt.reg_gt reg_gt,
year(vidt.bld_dt) yearbld, vidt.route route,
(These have many nulls and are used only for model of inspection if adequate)
vidt.dblside_typ, vidt.dblbott_typ, vidt.prop_typ, vidt.design, vidt.hull_mat
from crst_temp0, vidt
where
crst_temp0.iritvkey=vidt.vkey and
(
vidt.service="FREIGHT SHIP" or vidt.service="PUB. TANKSHIP/BARGE" or
vidt.service="TANK SHIP" or ((vidt.service="PASSENGER" or
vidt.service="PASSENGER SHIP") and vidt.reg_gt>=100)
) and
vidt.flag="US"
into temp vidtcrst;

```

```
select count(*)
from vidtcrst;
```

```
{*****Personnel Casualties*****}
```

{ Here, casualty data is assembled from CIVT and CIRT. CIRT, and CIVT are joined by (unique) Mccase and select out only deep-draft vessels (hence a little use of VIDT). Personnel casualties are constructed from CIRT (which has no vkey) and joined to CIVT to associate them with a Vkey. There are duplicate Vkey records in CIVT (of the 28,821 records, 13,548 have unique Vkey), so we need to choose only unique records)

```
{
drop table civt_dups;
drop table civt_nodups;
drop table cirt_civt0;
}
```

```
select
  civt.vkey civtvkey,deaths,missing,injured,cirt.incident_dt cirtdate
```

```
from cirt, civt, vidt
```

{Note that in CIVT, the vkey is not unique (in VIDT vkey is unique). Hence first get temp table civt\_dups (with duplicates). Then check for number of duplicates before grouping by vkey}

```
where
```

```
  cirt.mccase=civt.mccase and
  civt.vkey=vidt.vkey and
```

{Jim Law: conversion on July 14, 1994. The following query contracts CIRT to cases that are correct (drop mystery and inconsequential casualties). ctf\_ind=X are inconsequential cases. command\_endorse and command\_cls are mutually exclusive. command\_endorse=X implies that case has been reviewed and fwd to dt/HQ for review. command\_cls=X means that case is done and does not require review at dt/HQ. command\_endorse=X are legit cases and all should be considered. Of the command\_cls=X cases, only those with ctf\_ind=null should be considered since ctf\_ind=X implies an inconsequential case. }

```
(cirt.command_endorse="X"
or (cirt.command_cls="X" and cirt.ctf_ind is null)) and
```

```
(cirt.deaths>0 or cirt.missing>0 or cirt.injured>0) and
( civt.service="FREIGHT SHIP" or civt.service="PUB. TANKSHIP/BARGE"
or civt.service="TANK SHIP" or
((civt.service="PASSENGER" or civt.service="PASSENGER SHIP") and
  vidt.reg_gt>=100) )
```

```
into temp civt_dups;
select count(*) num_civtdups
from civt_dups;
```

{This set of statements selects non-duplicate rows in civt\_dup. If group by just civtvkey,incident\_dt, get almost same rows as this}

```
select * from civt_dups
group by civtvkey,cirtdate, deaths,missing,injured
into temp civt_nodups;
select count(*) num_civtnodups
from civt_nodups;
```

{group by vkey to attach to the inspections file. Note that numdates now gives the number of unique incident dates associated with that vessel}

```

select      civtvkey, cirtdate,
            sum(deaths) deaths, sum(missing) missing, sum(injured) injured
from civt_nodups
group by civtvkey, cirtdate
order by deaths desc, injured desc
into temp cirt_civt0;

```

```

select count(*) num_cirtcivt0
from cirt_civt0;
(drop table cirt_civt0;)

```

(Here we do the last part: join inspection and casualty tables, and Unload  
2 Personnel casualty files (one for M/Y and one for just Y))

```

{
drop table persinsp;
drop table inspect;
drop table inspect_MY;
drop table inspect_Y;
drop table justvkey;
drop table vesschar;
drop table dur1;
drop table dur2;
drop table dur3;
}

```

{I. Join hours and casualties.

vidtcrst sorted by iritvkey, iritdate, and cirt\_civt0 is sorted by civtvkey, cirtdate. Hence there are duplicate vkeys in both and the next join statement produces a small cartesian explosion, but this is ok since we Need this explosion because

- (i) we need to match only where cirtdate>iritdate, and
- (ii) we need to compute MIN duration among the cartesian matches)

(This first set of statements for making persinsp and checking)

```

select unique vidtcrst.*, cirt_civt0.*
from vidtcrst, outer cirt_civt0
where cirt_civt0.civtvkey=vidtcrst.iritvkey and
      cirt_civt0.cirtdate>=vidtcrst.iritdate
into temp persinsp;
select count(*) num_persinsp from persinsp;
(Count number of unique (iritvkey, iritdate) in persinsp)
select unique iritvkey, iritdate from persinsp into temp junk0;
select count(*) numuniq_persinsp from junk0;
drop table junk0;
(Count number of casualty vkeys that Are in vidtcrst)
select count(*) vidtcrst_keep from persinsp
where civtvkey is not null;

```

(This is to make the inspections by M/Y and also by just Y to join with the so grouped duration data below for the complete data set)

```

select *, month(iritdate) mo, year(iritdate) ye
from vidtcrst
into temp inspect;

```

{By MY}

```

select
    iritvkey, mo, ye,
    sum(numcases) numcases, sum(hull_hr) hull_hr, sum(mach_hr) mach_hr,

```

```

sum(train_hr) train_hr, sum(extra_hr) extra_hr, sum(textra_hr) textra_hr,
sum(admin_hr) admin_hr, sum(travel_hr) travel_hr, sum(ttravel_hr) ttravel_hr,
sum(other_hr) other_hr,
sum(num_def) num_def,
(Level II Dummies from Mike: Duration model on only Level II activities
Here only II.A activities since only U.S. flag MI activities)
sum(numd2a1) numd2a1, sum(numd2a2) numd2a2, sum(numd2a3) numd2a3,
(CRST types of inspections: indicators)
sum(crstannual) crstannual, sum(crstreinsp) crstreinsp,
sum(crstadmin) crstadmin, sum(crsthull) crsthull, sum(crstcoc) crstcoc,
sum(crstconstr) crstconstr, sum(crstcert) crstcert,
sum(crstinit) crstinit, sum(crstmach) crstmach, sum(crstdef) crstdef,
sum(crstother) crstother, sum(crstrest) crstrest
from inspect
group by iritvkey, mo, ye
into temp inspect_MY;

```

```

(By Y)
select
    iritvkey, ye,
    sum(numcases) numcases, sum(hull_hr) hull_hr, sum(mach_hr) mach_hr,
    sum(train_hr) train_hr, sum(extra_hr) extra_hr, sum(textra_hr) textra_hr,
    sum(admin_hr) admin_hr, sum(travel_hr) travel_hr, sum(ttravel_hr) ttravel_hr,
    sum(other_hr) other_hr,
    sum(num_def) num_def,
    (Level II Dummies from Mike: Duration model on only Level II activities
    Here only II.A activities since only U.S. flag MI activities)
    sum(numd2a1) numd2a1, sum(numd2a2) numd2a2, sum(numd2a3) numd2a3,
    (CRST types of inspections: indicators)
    sum(crstannual) crstannual, sum(crstreinsp) crstreinsp,
    sum(crstadmin) crstadmin, sum(crsthull) crsthull, sum(crstcoc) crstcoc,
    sum(crstconstr) crstconstr, sum(crstcert) crstcert,
    sum(crstinit) crstinit, sum(crstmach) crstmach, sum(crstdef) crstdef,
    sum(crstother) crstother, sum(crstrest) crstrest
from inspect
group by iritvkey, ye
into temp inspect_Y;

```

(Make a table grouped Just by iritvkey for vessel characteristics)

```

select iritvkey
from vidtcrst
group by iritvkey
into temp justvkey;
select count(*) num_justvkey from justvkey;

select justvkey.iritvkey,
    vidt.service service, vidt.flag flag, vidt.reg_gt reg_gt,
    year(vidt.bld_dt) yearbld, vidt.route route,
    (These have many nulls and are used only for model of inspection if adequate)
    vidt.dblside_typ, vidt.dblbott_typ, vidt.prop_typ, vidt.design, vidt.hull_mat
from justvkey, vidt
where
    justvkey.iritvkey=vidt.vkey and
    (
        vidt.service="FREIGHT SHIP" or vidt.service="PUB. TANKSHIP/BARGE" or
        vidt.service="TANK SHIP" or ((vidt.service="PASSENGER" or
        vidt.service="PASSENGER SHIP") and vidt.reg_gt>=100)
    ) and
    vidt.flag="US"
into temp vesschar;

```

```
select count(*) num_vesschar from vesschar;
```

(The following comments apply to when I was using Peggy's mapping for Level II activities. But since we are now using IRIT indicators are these comments still applicable? We'll find out, if there is a big difference between the M/Y and the just Y file size)

(II. Here we compute Duration, and get rid of duplicate values.

We Group by Month/Year of IRIT inspection. This is since several Level II activities may be grouped in a bunch but on several different days. We would like to count this bunch only once. There is still an approximation since bunch may overlap between two months. Can't prevent this in SQL Hence we do two data sets:

- (i) Group by Month/Year, as described above, and
- (ii) Group by just Year. This is a smaller data set, and is the correct one for Level II activities that are performed over 1 or 2 years)

(Note: for inspections with no casualty, duration=(1/1/95 - iritdate))

(Data set 1: Group by Month/Year)

```
select      iritvkey, month(iritdate) mo, year(iritdate) ye,
      (cirtdate-iritdate) dur_cas, ("1/1/95"-iritdate) dur_nocas
from persinsp
into temp dur1;
```

```
select iritvkey,mo,ye,min(dur_cas) mindur_cas,max(dur_nocas) dur_nocas
from dur1
```

```
group by iritvkey, mo,ye
order by iritvkey,ye,mo
```

```
into temp dur2;
```

```
select count(*) all_rows_MY_1 from dur2;
```

```
select * from dur2 where mindur_cas is not null into temp junk1;
```

```
select count(*) with_casualty_MY_1 from junk1;
```

```
drop table junk1;
```

(Join duration and inspection tables)

```
select      inspect_MY.*, mindur_cas, dur_nocas,
      service , flag, reg_gt, yearbld, route,
      dblside_typ, dblbott_typ, prop_typ, design, hull_mat
from inspect_MY, dur2, vesschar
where      inspect_MY.iritvkey=dur2.iritvkey and
      inspect_MY.iritvkey=vesschar.iritvkey and
      inspect_MY.mo=dur2.mo and
      inspect_MY.ye=dur2.ye
```

```
order by iritvkey,ye,mo
```

```
into temp dur3;
```

```
select count(*) all_rows_MY_2 from dur3;
```

```
select * from dur3 where mindur_cas is not null into temp junk1;
```

```
select count(*) with_casualty_MY_2 from junk1;
```

```
drop table junk1;
```

```
unload to "/nfs/ttd32/optical/50b/trix.dat/dur_2a1_my.pers" delimiter ","
```

```
select *
```

```
from dur3;
```

(Check the aggregation)

```
select      count(*)      numrows,      sum(hull_hr)      tot_hull_hr,      sum(mach_hr)
tot_mach_hr,
```

```
      sum(admin_hr) tot_admin_hr
```

```
from dur3;
```

```
select count(*) numrows, sum(numd2a1) numd2a1,sum(numd2a2) numd2a2,
      sum(numd2a3) numd2a3
```

```

from dur3;

drop table dur1;
drop table dur2;
drop table dur3;

(Data set 2: Group by just Year)
select      iritvkey, month(iritdate) mo, year(iritdate) ye,
            (cirtdate-iritdate) dur_cas, ('1/1/95'-iritdate) dur_nocas
from persinsp
into temp dur1;

select iritvkey, ye, min(dur_cas) mindur_cas, max(dur_nocas) dur_nocas
from dur1
group by iritvkey, ye
order by iritvkey, ye
into temp dur2;
select count(*) all_rows_Y_1 from dur2;
select * from dur2 where mindur_cas is not null into temp junk1;
select count(*) with_casualty_Y_1 from junk1;
drop table junk1;

(Join duration and inspection tables)
select      inspect_Y.*, mindur_cas, dur_nocas,
            service , flag, reg_gt, yearbld, route,
            dblside_typ, dblbott_typ, prop_typ, design, hull_mat
from inspect_Y, dur2, vesschar
where       inspect_Y.iritvkey=dur2.iritvkey and
            inspect_Y.iritvkey=vesschar.iritvkey and
            inspect_Y.ye=dur2.ye
order by iritvkey, ye
into temp dur3;
select count(*) all_rows_Y_2 from dur3;
select * from dur3 where mindur_cas is not null into temp junk1;
select count(*) with_casualty_Y_2 from junk1;
drop table junk1;

unload to "/nfs/ttd32/optical/50b/trix.dat/dur_2a1_y.pers" delimiter ","
select *
from dur3;

select      count(*)    numrows,    sum(hull_hr)    tot_hull_hr,    sum(mach_hr)
tot_mach_hr,
            sum(admin_hr) tot_admin_hr
from dur3;
select count(*) numrows, sum(numd2a1) numd2a1, sum(numd2a2) numd2a2,
            sum(numd2a3) numd2a3
from dur3;

(print this out for var names to an output file since need also to print for
pollution data set)
output to /users/gawande/dur_a1_pers.out
select *
from dur3
where reg_gt>100000;

```

```

(*****Pollution Casualties*****)

```

(Be sure to run MIDUR1 and MIDUR2 before these two progs)

( Here, pollution casualty data is assembled from CIVT and CIRT. CIRT, and CIVT are joined by (unique) Mccase and select out only deep-draft vessels (hence a little use of VIDT). Pollution incidents are constructed from CIRT (which has no vkey) and joined to CIVT to associate them with a Vkey. There are duplicate Vkey records in CIVT (of the 28,821 records, 13,548 have unique Vkey), so we need to choose only unique records)

```
drop table civt_dups;
drop table civt_nodups;
drop table cirt_civt0;
```

```
select
  civt.vkey civtvkey, cirt.incident_dt cirtdate
```

```
from cirt, civt, vidt
```

(Note that using VIDT for the reg\_gt>100 info and hence need Unique in select statement since in CIVT, the vkey is not unique (in VIDT vkey is unique))  
where

```
  cirt.mccase=civt.mccase and
  civt.vkey=vidt.vkey and
```

(Jim Law: conversion on July 14, 1994. The following query contracts CIRT to cases that are correct (drop mystery and inconsequential casualties). ctf\_ind=X are inconsequential cases. command\_endorse and command\_cls are mutually exclusive. command\_endorse=X implies that case has been reviewed and fwd to dt/HQ for review. command\_cls=X means that case is done and does not require review at dt/HQ. command\_endorse=X are legit cases and all should be considered. Of the command\_cls=X cases, only those with ctf\_ind=null should be considered since ctf\_ind=X implies an inconsequential case. )

(Jim Law: conversion on July 14, 1994. The following query contracts CIRT to cases that are correct (drop mystery and inconsequential casualties). ctf\_ind=X are inconsequential cases. command\_endorse and command\_cls are mutually exclusive. command\_endorse=X implies that case has been reviewed and fwd to dt/HQ for review. command\_cls=X means that case is done and does not require review at dt/HQ. command\_endorse=X are legit cases and all should be considered. Of the command\_cls=X cases, only those with ctf\_ind=null should be considered since ctf\_ind=X implies an inconsequential case. )

```
(cirt.command_endorse="X"
or (cirt.command_cls="X" and cirt.ctf_ind is null)) and
```

```
cirt.mcpd_ind>=1 and
(cirt.pol_ind="X" or pri_nature="POLLUTION") and
```

(To select Only BAD cases, unblock this statement)  
(severity in ("MAJOR", "POTENT", "MEDIUM") and)

```
( civt.service="FREIGHT SHIP" or civt.service="PUB. TANKSHIP/BARGE"
or civt.service="TANK SHIP" or
((civt.service="PASSENGER" or civt.service="PASSENGER SHIP") and
  vidt.reg_gt>=100) )
into temp civt_dups;
select count(*) num_civtdups
from civt_dups;
```

(This set of statements selects non-duplicate rows in civt\_dup. Although this is an approximation of duplicates, its not a bad one. Can't really



```

    check for the pollution cases since mostly number of cases is 1)
select * from civt_dups
group by civtvkey, cirtdate
into temp civt_nodups;
select count(*) num_civtnodups
from civt_nodups;

```

(group by vkey to attach to the inspections file. Note that poll\_incids now gives the number of unique incident dates associated with that vessel on a cirtdate, and hence is probably always equal to 1.  
Actually poll\_incids is superfluous and never used in the duration file anyway)

```

select civtvkey, cirtdate, count(*) poll_incids
from civt_nodups
group by civtvkey, cirtdate
order by poll_incids desc
into temp cirt_civt0;

select count(*) num_cirtcivt0
from cirt_civt0;
(drop table cirt_civt0;)

```

(Here we do the last part: join inspection and casualty tables, and Unload 2 Pollution casualty files (one for M/Y and one for just Y))

```

drop table inspect;
drop table inspect_MY;
drop table inspect_Y;
drop table justvkey;
drop table vesschar;
drop table dur1;
drop table dur2;
drop table dur3;

```

(I. Join hours and casualties.

vidtcrst sorted by iritvkey, iritdate, and cirt\_civt0 is sorted by civtvkey, cirtdate. Hence there are duplicate vkeys in both and the next join statement produces a small cartesian explosion, but this is ok since we Need this explosion because

- (i) we need to match only where cirtdate>iritdate, and
- (ii) we need to compute MIN duration among the cartesian matches)

(This first set of statements for making pollinsp and checking)

```

select unique vdtcrst.*, cirt_civt0.*
from vdtcrst, outer cirt_civt0
where cirt_civt0.civtvkey=vidtcrst.iritvkey and
      cirt_civt0.cirtdate>=vidtcrst.iritdate
into temp pollinsp;
select count(*) num_pollinsp from pollinsp;
(Count number of unique (iritvkey,iritdate) in pollinsp)
select unique iritvkey,iritdate from pollinsp into temp junk0;
select count(*) numuniq_pollinsp from junk0;
drop table junk0;
(Count number of casualty vkeys that Are in vdtcrst)
select count(*) vdtcrst_keep from pollinsp
where civtvkey is not null;

```

(This is to make the inspections by M/Y and also by just Y to join with the so grouped duration data below for the complete data set)

```
select *, month(iritdate) mo, year(iritdate) ye
from vidtcrst
into temp inspect;
```

{By MY}

```
select
  iritvkey, mo, ye,
  sum(numcases) numcases, sum(hull_hr) hull_hr, sum(mach_hr) mach_hr,
  sum(train_hr) train_hr, sum(extra_hr) extra_hr, sum(textra_hr) textra_hr,
  sum(admin_hr) admin_hr, sum(travel_hr) travel_hr, sum(ttravel_hr) ttravel_hr,
  sum(other_hr) other_hr,
  sum(num_def) num_def,
  {Level II Dummies from Mike: Duration model on only Level II activities
  Here only II.A activities since only U.S. flag MI activities}
  sum(numd2a1) numd2a1, sum(numd2a2) numd2a2, sum(numd2a3) numd2a3,
  {CRST types of inspections: indicators}
  sum(crstannual) crstannual, sum(crstreinsp) crstreinsp,
  sum(crstadmin) crstadmin, sum(crsthull) crsthull, sum(crstcoc) crstcoc,
  sum(crstconstr) crstconstr, sum(crstcert) crstcert,
  sum(crstinit) crstinit, sum(crstmach) crstmach, sum(crstdef) crstdef,
  sum(crstother) crstother, sum(crstrest) crstrest
from inspect
group by iritvkey, mo, ye
into temp inspect_MY;
```

{By Y}

```
select
  iritvkey, ye,
  sum(numcases) numcases, sum(hull_hr) hull_hr, sum(mach_hr) mach_hr,
  sum(train_hr) train_hr, sum(extra_hr) extra_hr, sum(textra_hr) textra_hr,
  sum(admin_hr) admin_hr, sum(travel_hr) travel_hr, sum(ttravel_hr) ttravel_hr,
  sum(other_hr) other_hr,
  sum(num_def) num_def,
  {Level II Dummies from Mike: Duration model on only Level II activities
  Here only II.A activities since only U.S. flag MI activities}
  sum(numd2a1) numd2a1, sum(numd2a2) numd2a2, sum(numd2a3) numd2a3,
  {CRST types of inspections: indicators}
  sum(crstannual) crstannual, sum(crstreinsp) crstreinsp,
  sum(crstadmin) crstadmin, sum(crsthull) crsthull, sum(crstcoc) crstcoc,
  sum(crstconstr) crstconstr, sum(crstcert) crstcert,
  sum(crstinit) crstinit, sum(crstmach) crstmach, sum(crstdef) crstdef,
  sum(crstother) crstother, sum(crstrest) crstrest
from inspect
group by iritvkey, ye
into temp inspect_Y;
```

{Make a table grouped Just by iritvkey for vessel characteristics}

```
select iritvkey
from vidtcrst
group by iritvkey
into temp justvkey;
select count(*) num_justvkey from justvkey;
```

```
select justvkey.iritvkey,
  vidt.service service, vidt.flag flag, vidt.reg_gt reg_gt,
  year(vidt.bld_dt) yearbld, vidt.route route,
  {These have many nulls and are used only for model of inspection if adequate}
  vidt.dblside_typ, vidt.dblbott_typ, vidt.prop_typ, vidt.design, vidt.hull_mat
from justvkey, vidt
where
```

```

justvkey.iritvkey=vidt.vkey and
(
  viddt.service="FREIGHT SHIP" or viddt.service="PUB. TANKSHIP/BARGE" or
  viddt.service="TANK SHIP" or ((viddt.service="PASSENGER" or
  viddt.service="PASSENGER SHIP") and viddt.reg_gt>=100)
) and
viddt.flag="US"
into temp vesschar;
select count(*) num_vesschar from vesschar;

```

(II. Here we compute Duration, and get rid of duplicate values.  
 We Group by Month/Year of IRIT inspection. This is since several Level II activities may be grouped in a bunch but on several different days. We would like to count this bunch only once. There is still an approximation since bunch may overlap between two months. Can't prevent this in SQL  
 Hence we do two data sets:

- (i) Group by Month/Year, as described above, and
- (ii) Group by just Year. This is a smaller data set, and is the correct one for Level II activities that are performed over 1 or 2 years)

(Note: for inspections with no casualty, duration=(1/1/95 - iritdate))

```

(Data set 1: Group by Month/Year)
select      iritvkey, month(iritdate) mo, year(iritdate) ye,
            (cirtdate-iritdate) dur_cas, ("1/1/95"-iritdate) dur_nocas
from pollinsp
into temp dur1;

```

```

select iritvkey,mo,ye,min(dur_cas) mindur_cas,max(dur_nocas) dur_nocas
from dur1
group by iritvkey, mo,ye
order by iritvkey,ye,mo
into temp dur2;
select count(*) all_rows_MY_1 from dur2;
select * from dur2 where mindur_cas is not null into temp junk1;
select count(*) with_casualty_MY_1 from junk1;
drop table junk1;

```

```

(Join duration and inspection tables)
select      inspect_MY.*, mindur_cas, dur_nocas,
            service , flag, reg_gt, yearbld, route,
            dblside_typ, dblbott_typ, prop_typ, design, hull_mat
from inspect_MY, dur2, vesschar
where       inspect_MY.iritvkey=dur2.iritvkey and
            inspect_MY.iritvkey=vesschar.iritvkey and
            inspect_MY.mo=dur2.mo and
            inspect_MY.ye=dur2.ye
order by iritvkey,ye,mo
into temp dur3;
select count(*) all_rows_MY_2 from dur3;
select * from dur3 where mindur_cas is not null into temp junk1;
select count(*) with_casualty_MY_2 from junk1;
drop table junk1;

```

```

unload to "/nfs/ttd32/optical/50b/trix.dat/dur_2a1_my.pollall" delimiter ","
select *
from dur3;

```

```

(Check the aggregation)
select      count(*)    numrows,      sum(hull_hr)    tot_hull_hr,      sum(mach_hr)

```

```

tot_mach_hr,
    sum(admin_hr) tot_admin_hr
from dur3;
select count(*) numrows, sum(numd2a1) numd2a1, sum(numd2a2) numd2a2,
    sum(numd2a3) numd2a3
from dur3;

drop table dur1;
drop table dur2;
drop table dur3;

(Data set 2: Group by just Year)
select      iritvkey, month(iritdate) mo, year(iritdate) ye,
    (cirtdate-iritdate) dur_cas, ("1/1/95"-iritdate) dur_nocas
from pollinsp
into temp dur1;

select iritvkey, ye, min(dur_cas) mindur_cas, max(dur_nocas) dur_nocas
from dur1
group by iritvkey, ye
order by iritvkey, ye
into temp dur2;
select count(*) all_rows_Y_1 from dur2;
select * from dur2 where mindur_cas is not null into temp junk1;
select count(*) with_casualty_Y_1 from junk1;
drop table junk1;

(Join duration and inspection tables)
select      inspect_Y.*, mindur_cas, dur_nocas,
    service , flag, reg_gt, yearbld, route,
    dblside_typ, dblbott_typ, prop_typ, design, hull_mat
from inspect_Y, dur2, vesschar
where      inspect_Y.iritvkey=dur2.iritvkey and
    inspect_Y.iritvkey=vesschar.iritvkey and
    inspect_Y.ye=dur2.ye
order by iritvkey, ye
into temp dur3;
select count(*) all_rows_Y_2 from dur3;
select * from dur3 where mindur_cas is not null into temp junk1;
select count(*) with_casualty_Y_2 from junk1;
drop table junk1;

unload to "/nfs/ttd32/optical/50b/trix.dat/dur_2a1_y.pollall" delimiter ","
select *
from dur3;

select      count(*)    numrows,    sum(hull_hr)    tot_hull_hr,    sum(mach_hr)
tot_mach_hr,
    sum(admin_hr) tot_admin_hr
from dur3;
select count(*) numrows, sum(numd2a1) numd2a1, sum(numd2a2) numd2a2,
    sum(numd2a3) numd2a3
from dur3;

(print this out for var names to an output file since need also to print for
pollution data set)
output to /users/gawande/dur_a1_poll.out
select *
from dur3
where reg_gt>100000;

```



**DUR\_A2.SQL**

(MI Cases)

(After conversation with Wyman Briggs on 18 July, 1994: Use IRIT indicators for inspection types for Level II.A.1-3 activities, and use Peggy Thurber's mapping (grouped by Mike into d31-d39 indicators) for Level III activities)

- (1. Change inspection from IRIT appropriately: cert\_inspect for COI, reinspect for Reinspection, and hull for hull exam.
2. Change the Unload to file else WILL WRITE OVER)

(Only post 1991 (incl) inspections since duration since last inspection to casualty, and first casualty in Minmod is 02/91)

{

Duration data: The idea is as follows.

The lhs variable is duration from the Last inspection till date of casualty. Analysis will be by Level II activities: (i) 3 MI activities: COI, Annual Vessel Reinspection, Hull Exam, and (ii) 3 PS activities: Annual Foreign Freight Exam, Annual Foreign Tanker Vessel Exam, Annual Foreign Passenger. The same vessel inspected (using same activity) twice is treated as two different vessels, and as two observations (i.e. Hence large data set.)

If the vessel has no casualty after an activity, the lhs takes the value of duration till the next activity of the same type. The problem is that

(a) casualty may not have anything to do with that activity. For, example pri\_nature in CIRT may possess such info. This can (should?) be incorporated by attributing only those casualties to that activity. This requires that pri\_nature should be mapped into Level II activities. This mapping will probably be one(pri\_nature) to many(Level II activities).

(b) should we be taking duration till next activity of the same type, or any activity. If we take into consideration pri\_nature and ascribe only the "casualties connected with that activity" in computing the lhs variable, then we take duration till next activity of the Same type if no casualty in the meantime. Else not so easy, since casualty may be of a nature attributable to another kind of activity. Even if pri\_nature used, probably not too easy, since mapping is probably one(pri\_nature) to many or all(Level II activity). So problem still unanswered.

Solution: We take the simple road. All casualties, not just those attributable directly to the Level II activity is considered. This is OK since anyway a large range of inspections map into a Level II activity, and Many pri\_natures map into this set of inspections. Also since some vessels are subject to a Level II activity sooner than others, rather than take the duration between two inspections, in the event of No casualty we take the duration between the inspection date and 1/1/1995. The problem is that the closer the inspection to that date, the shorter the duration recorded. But mainly, it is convenient, the duration so computed does not exceed the duration where there Are casualties, and since the last inspection was in 12/1993, this simplification is not expected to qualitatively change any results.

rhs variable is still number of hours devoted to that activity etc. The main difference is the age of the vessel, which is to be computed at the time of casualty, or at the time of next inspection if no casualty.

)

(For the hours of inspection equation have (i) num\_def from IRIT and (ii) indicators for inspection types for other CRST inspections)

(\*\*\*\*\*HOURS of INSPECTIONS\*\*\*\*\*)

select

irit.vkey iritvkey, irit.dt iritdate,

```

count(*) numcases, sum(hr_hull) hull_hr, sum(hr_mach) mach_hr,
sum(hr_train) train_hr, sum(hr_extra) extra_hr, sum(hr_textra) textra_hr,
sum(hr_admin) admin_hr, sum(hr_travel) travel_hr, sum(hr_ttravel) ttravel_hr,
sum(hr_other) other_hr,
sum(irit.num_def) num_def,
(Sum of Mike's dummies (based on Peggy's mapping) gives the total of
sub-inspections for that Level II activity on that date)
sum(d2a1) numd2a1, sum(d2a2) numd2a2, sum(d2a3) numd2a3,
(CRST types of inspections: indicators)
sum(crst.dannual) crstannual, sum(crst.dreinsp) crstreinsp,
sum(crst.dadmin) crstadmin, sum(crst.dhull) crsthull, sum(crst.dcoc) crstcoc,
sum(crst.dconstr) crstconstr, sum(crst.dcert) crstcert,
sum(crst.dinit) crstinit, sum(crst.dmach) crstmach, sum(crst.ddeficit) crstdef,
sum(crst.dother) crstother, sum(crst.drest) crstrest
from crst, irit

```

(Since first casualty case is 02/91 and duration is from last inspection, only inspections after 1991 are considered. This is unlike the Poisson stuff where inspections after 1989 are considered)

where

```

(activity II.A.2=Reinspection)
irit.reinspect="X" and

irit.micase[1,2]="MI" and
irit.vkey[1,2]="VN" and
crst.case[1,2]="MI" and
(since first casualty case is 02/91 and duration is from last inspec)
crst.case[3,4]>="91" and
crst.case=irit.micase

```

```

group by irit.vkey, irit.dt
into temp crst_temp0;

```

```

select count(*) countcrst_temp0
from crst_temp0;

```

(This file joins CRST\_TEMP0 (agg hours by vkey) to VIDT to identify the foll: service, flag, reg\_gt, bld\_yr, route.)

```

(drop table vidtcrst;)

```

```

select
crst_temp0.*,
vidt.service service, vidt.flag flag, vidt.reg_gt reg_gt,
year(vidt.bld_dt) yearbld, vidt.route route,
(These have many nulls and are used only for model of inspection if adequate)
vidt.dblside_typ, vidt.dblbott_typ, vidt.prop_typ, vidt.design, vidt.hull_mat

```

```

from crst_temp0, vidt

```

```

where
crst_temp0.iritvkey=vidt.vkey and
(
vidt.service="FREIGHT SHIP" or vidt.service="PUB. TANKSHIP/BARGE" or
vidt.service="TANK SHIP" or ((vidt.service="PASSENGER" or
vidt.service="PASSENGER SHIP") and vidt.reg_gt>=100)
) and
vidt.flag="US"
into temp vidtcrst;

```

```
select count(*)
from vidtcrst;
```

(\*\*\*\*\*Personnel Casualties\*\*\*\*\*)

( Here, casualty data is assembled from CIVT and CIRT. CIRT, and CIVT are joined by (unique) Mccase and select out only deep-draft vessels (hence a little use of VIDT). Personnel casualties are constructed from CIRT (which has no vkey) and joined to CIVT to associate them with a Vkey. There are duplicate Vkey records in CIVT (of the 28,821 records, 13,548 have unique Vkey), so we need to choose only unique records)

```
{
drop table civt_dups;
drop table civt_nodups;
drop table cirt_civt0;
}
```

```
select
    civt.vkey civtvkey,deaths,missing,injured,cirt.incident_dt cirtdate
```

```
from cirt, civt, vidt
```

(Note that in CIVT, the vkey is not unique (in VIDT vkey is unique). Hence first get temp table civt\_dups (with duplicates). Then check for number of duplicates before grouping by vkey)

```
where
    cirt.mccase=civt.mccase and
    civt.vkey=vidt.vkey and
```

(Jim Law: conversion on July 14, 1994. The following query contracts CIRT to cases that are correct (drop mystery and inconsequential casualties). ctf\_ind=X are inconsequential cases. command\_endorse and command\_cls are mutually exclusive. command\_endorse=X implies that case has been reviewed and fwd to dt/HQ for review. command\_cls=X means that case is done and does not require review at dt/HQ. command\_endorse=X are legit cases and all should be considered. Of the command\_cls=X cases, only those with ctf\_ind=null should be considered since ctf\_ind=X implies an inconsequential case. )

```
(cirt.command_endorse="X"
or (cirt.command_cls="X" and cirt.ctf_ind is null)) and
```

```
(cirt.deaths>0 or cirt.missing>0 or cirt.injured>0) and
(civt.service="FREIGHT SHIP" or civt.service="PUB. TANKSHIP/BARGE"
or civt.service="TANK SHIP" or
((civt.service="PASSENGER" or civt.service="PASSENGER SHIP") and
vidt.reg_gt>=100) )
```

```
into temp civt_dups;
select count(*) num_civtdups
from civt_dups;
```

(This set of statements selects non-duplicate rows in civt\_dup. If group by just civtvkey,incident\_dt, get almost same rows as this)

```
select * from civt_dups
group by civtvkey,cirtdate, deaths,missing,injured
into temp civt_nodups;
select count(*) num_civtnodups
from civt_nodups;
```

(group by vkey to attach to the inspections file. Note that numdates now gives the number of unique incident dates associated with that vessel)



```

select      civtvkey, cirtdate,
            sum(deaths) deaths, sum(missing) missing, sum(injured) injured
from civt_nodups
group by civtvkey, cirtdate
order by deaths desc, injured desc
into temp cirt_civt0;

```

```

select count(*) num_cirtcivt0
from cirt_civt0;
(drop table cirt_civt0;)

```

(Here we do the last part: join inspection and casualty tables, and Unload  
2 Personnel casualty files (one for M/Y and one for just Y))

```

{
drop table persinsp;
drop table inspect;
drop table inspect_MY;
drop table inspect_Y;
drop table justvkey;
drop table vesschar;
drop table dur1;
drop table dur2;
drop table dur3;
}

```

(I. Join hours and casualties.  
vidtcrst sorted by iritvkey, iritdate, and cirt\_civt0 is sorted by civtvkey,  
cirtdate. Hence there are duplicate vkeys in both and the next join  
statement produces a small cartesian explosion, but this is ok since we Need  
this explosion because  
(i) we need to match only where cirtdate>iritdate, and  
(ii) we need to compute MIN duration among the cartesian matches)

(This first set of statements for making persinsp and checking)

```

select unique vidtcrst.*, cirt_civt0.*
from vidtcrst, outer cirt_civt0
where cirt_civt0.civtvkey=vidtcrst.iritvkey and
      cirt_civt0.cirtdate>=vidtcrst.iritdate
into temp persinsp;
select count(*) num_persinsp from persinsp;
(Count number of unique (iritvkey,iritdate) in persinsp)
select unique iritvkey,iritdate from persinsp into temp junk0;
select count(*) numuniq_persinsp from junk0;
drop table junk0;
(Count number of casualty vkeys that Are in vidtcrst)
select count(*) vidtcrst_keep from persinsp
where civtvkey is not null;

```

(This is to make the inspections by M/Y and also by just Y to join with  
the so grouped duration data below for the complete data set)

```

select *, month(iritdate) mo, year(iritdate) ye
from vidtcrst
into temp inspect;

```

(By MY)

```

select
    iritvkey, mo, ye,
    sum(numcases) numcases, sum(hull_hr) hull_hr, sum(mach_hr) mach_hr,

```

```

sum(train_hr) train_hr, sum(extra_hr) extra_hr, sum(textra_hr) textra_hr,
sum(admin_hr) admin_hr, sum(travel_hr) travel_hr, sum(ttravel_hr) ttravel_hr,
sum(other_hr) other_hr,
sum(num_def) num_def,
(Level II Dummies from Mike: Duration model on only Level II activities
Here only II.A activities since only U.S. flag MI activities)
sum(numd2a1) numd2a1, sum(numd2a2) numd2a2, sum(numd2a3) numd2a3,
(CRST types of inspections: indicators)
sum(crstannual) crstannual, sum(crstreinsp) crstreinsp,
sum(crstadmin) crstadmin, sum(crsthull) crsthull, sum(crstcoc) crstcoc,
sum(crstconstr) crstconstr, sum(crstcert) crstcert,
sum(crstinit) crstinit, sum(crstmach) crstmach, sum(crstdef) crstdef,
sum(crstother) crstother, sum(crstrest) crstrest
from inspect
group by iritvkey, mo, ye
into temp inspect_MY;

(By Y)
select
  iritvkey, ye,
  sum(numcases) numcases, sum(hull_hr) hull_hr, sum(mach_hr) mach_hr,
  sum(train_hr) train_hr, sum(extra_hr) extra_hr, sum(textra_hr) textra_hr,
  sum(admin_hr) admin_hr, sum(travel_hr) travel_hr, sum(ttravel_hr) ttravel_hr,
  sum(other_hr) other_hr,
  sum(num_def) num_def,
(Level II Dummies from Mike: Duration model on only Level II activities
Here only II.A activities since only U.S. flag MI activities)
sum(numd2a1) numd2a1, sum(numd2a2) numd2a2, sum(numd2a3) numd2a3,
(CRST types of inspections: indicators)
sum(crstannual) crstannual, sum(crstreinsp) crstreinsp,
sum(crstadmin) crstadmin, sum(crsthull) crsthull, sum(crstcoc) crstcoc,
sum(crstconstr) crstconstr, sum(crstcert) crstcert,
sum(crstinit) crstinit, sum(crstmach) crstmach, sum(crstdef) crstdef,
sum(crstother) crstother, sum(crstrest) crstrest
from inspect
group by iritvkey, ye
into temp inspect_Y;

(Make a table grouped Just by iritvkey for vessel characteristics)
select iritvkey
from vidtcrst
group by iritvkey
into temp justvkey;
select count(*) num_justvkey from justvkey;

select justvkey.iritvkey,
  vidt.service service, vidt.flag flag, vidt.reg_gt reg_gt,
  year(vidt.bld_dt) yearbld, vidt.route route,
(These have many nulls and are used only for model of inspection if adequate)
  vidt.dblside_typ, vidt.dblbott_typ, vidt.prop_typ, vidt.design, vidt.hull_mat
from justvkey, vidt
where
  justvkey.iritvkey=vidt.vkey and
  (
    vidt.service="FREIGHT SHIP" or vidt.service="PUB. TANKSHIP/BARGE" or
    vidt.service="TANK SHIP" or ((vidt.service="PASSENGER" or
    vidt.service="PASSENGER SHIP") and vidt.reg_gt>=100)
  ) and
  vidt.flag="US"
into temp vesschar;

```

```
select count(*) num_vesschar from vesschar;
```

{The following comments apply to when I was using Peggy's mapping for Level II activities. But since we are now using IRIT indicators are these comments still applicable? We'll find out, if there is a big difference between the M/Y and the just Y file size}

{II. Here we compute Duration, and get rid of duplicate values.

We Group by Month/Year of IRIT inspection. This is since several Level II activities may be grouped in a bunch but on several different days. We would like to count this bunch only once. There is still an approximation since bunch may overlap between two months. Can't prevent this in SQL Hence we do two data sets:

- (i) Group by Month/Year, as described above, and
- (ii) Group by just Year. This is a smaller data set, and is the correct one for Level II activities that are performed over 1 or 2 years)

{Note: for inspections with no casualty, duration=(1/1/95 - iritdate)}

{Data set 1: Group by Month/Year}

```
select      iritvkey, month(iritdate) mo, year(iritdate) ye,
            (cirtdate-iritdate) dur_cas, ("1/1/95"-iritdate) dur_nocas
from persinsp
into temp dur1;
```

```
select iritvkey,mo,ye,min(dur_cas) mindur_cas,max(dur_nocas) dur_nocas
from dur1
```

```
group by iritvkey, mo,ye
order by iritvkey,ye,mo
into temp dur2;
```

```
select count(*) all_rows_MY_1 from dur2;
```

```
select * from dur2 where mindur_cas is not null into temp junk1;
```

```
select count(*) with_casualty_MY_1 from junk1;
drop table junk1;
```

{Join duration and inspection tables}

```
select      inspect_MY.*, mindur_cas, dur_nocas,
            service , flag, reg_gt, yearbld, route,
            dblside_typ, dblbott_typ, prop_typ, design, hull_mat
from inspect_MY, dur2, vesschar
where      inspect_MY.iritvkey=dur2.iritvkey and
            inspect_MY.iritvkey=vesschar.iritvkey and
            inspect_MY.mo=dur2.mo and
            inspect_MY.ye=dur2.ye
```

```
order by iritvkey,ye,mo
into temp dur3;
```

```
select count(*) all_rows_MY_2 from dur3;
```

```
select * from dur3 where mindur_cas is not null into temp junk1;
```

```
select count(*) with_casualty_MY_2 from junk1;
drop table junk1;
```

```
unload to "/nfs/ttd32/optical/50b/trix.dat/dur_2a2_my.pers" delimiter ","
```

```
select *
from dur3;
```

{Check the aggregation}

```
select      count(*)      numrows,      sum(hull_hr)      tot_hull_hr,      sum(mach_hr)
tot_mach_hr,
            sum(admin_hr) tot_admin_hr
from dur3;
```

```
select count(*) numrows, sum(numd2a1) numd2a1,sum(numd2a2) numd2a2,
            sum(numd2a3) numd2a3
```

```

from dur3;

drop table dur1;
dro table dur2;
drop table dur3;

(Data set 2: Group by just Year)
select      iritvkey, month(iritdate) mo, year(iritdate) ye,
            (cirtdate-iritdate) dur_cas, ("1/1/95"-iritdate) dur_nocas
from persinsp
into temp dur1;

select iritvkey, ye, min(dur_cas) mindur_cas, max(dur_nocas) dur_nocas
from dur1
group by iritvkey, ye
order by iritvkey, ye
into temp dur2;
select count(*) all_rows_Y_1 from dur2;
select * from dur2 where mindur_cas is not null into temp junk1;
select count(*) with_casualty_Y_1 from junk1;
drop table junk1;

(Join duration and inspection tables)
select      inspect_Y.*, mindur_cas, dur_nocas,
            service , flag, reg_gt, yearbld, route,
            dblside_typ, dblbott_typ, prop_typ, design, hull_mat
from inspect_Y, dur2, vesschar
where       inspect_Y.iritvkey=dur2.iritvkey and
            inspect_Y.iritvkey=vesschar.iritvkey and
            inspect_Y.ye=dur2.ye
order by iritvkey, ye
into temp dur3;
select count(*) all_rows_Y_2 from dur3;
select * from dur3 where mindur_cas is not null into temp junk1;
select count(*) with_casualty_Y_2 from junk1;
drop table junk1;

unload to "/nfs/ttd32/optical/50b/trix.dat/dur_2a2_y.pers" delimiter ","
select *
from dur3;

select      count(*)    numrows,      sum(hull_hr)    tot_hull_hr,      sum(mach_hr)
tot_mach_hr,
            sum(admin_hr) tot_admin_hr
from dur3;
select count(*) numrows, sum(numd2a1) numd2a1, sum(numd2a2) numd2a2,
            sum(numd2a3) numd2a3
from dur3;

(print this out for var names to an output file since need also to print for
pollution data set)
output to /users/gawande/dur_a2_pers.out
select *
from dur3
where reg_gt>100000;

(*****Pollution Casualties*****)

```

(Be sure to run MIDUR1 and MIDUR2 before these two progs)

( Here, pollution casualty data is assembled from CIVT and CIRT. CIRT, and CIVT are joined by (unique) Mccase and select out only deep-draft vessels (hence a little use of VIDT). Pollution incidents are constructed from CIRT (which has no vkey) and joined to CIVT to associate them with a Vkey. There are duplicate Vkey records in CIVT (of the 28,821 records, 13,548 have unique Vkey), so we need to choose only unique records)

```
drop table civt_dups;
drop table civt_nodups;
drop table cirt_civt0;
```

```
select
  civt.vkey civtvkey, cirt.incident_dt cirtdate
from cirt, civt, vidt
(Note that using VIDT for the reg_gt>100 info and hence need Unique in select
statement since in CIVT, the vkey is not unique (in VIDT vkey is unique))
where
  cirt.mccase=civt.mccase and
  civt.vkey=vidt.vkey and
```

(Jim Law: conversion on July 14, 1994. The following query contracts CIRT to cases that are correct (drop mystery and inconsequential casualties). ctf\_ind=X are inconsequential cases. command\_endorse and command\_cls are mutually exclusive. command\_endorse=X implies that case has been reviewed and fwd to dt/HQ for review. command\_cls=X means that case is done and does not require review at dt/HQ. command\_endorse=X are legit cases and all should be considered. Of the command\_cls=X cases, only those with ctf\_ind=null should be considered since ctf\_ind=X implies an inconsequential case. )

(Jim Law: conversion on July 14, 1994. The following query contracts CIRT to cases that are correct (drop mystery and inconsequential casualties). ctf\_ind=X are inconsequential cases. command\_endorse and command\_cls are mutually exclusive. command\_endorse=X implies that case has been reviewed and fwd to dt/HQ for review. command\_cls=X means that case is done and does not require review at dt/HQ. command\_endorse=X are legit cases and all should be considered. Of the command\_cls=X cases, only those with ctf\_ind=null should be considered since ctf\_ind=X implies an inconsequential case. )

```
(cirt.command_endorse="X"
or (cirt.command_cls="X" and cirt.ctf_ind is null)) and

cirt.mcpd_ind>=1 and
(cirt.pol_ind="X" or pri_nature="POLLUTION") and
```

(To select Only BAD cases, unblock this statement)  
(severity in ("MAJOR","POTENT","MEDIUM") and)

```
( civt.service="FREIGHT SHIP" or civt.service="PUB. TANKSHIP/BARGE"
or civt.service="TANK SHIP" or
((civt.service="PASSENGER" or civt.service="PASSENGER SHIP") and
  vidt.reg_gt>=100) )
into temp civt_dups;
select count(*) num_civtdups
from civt_dups;
```

(This set of statements selects non-duplicate rows in civt\_dup. Although this is an approximation of duplicates, its not a bad one. Can't really

```

check for the pollution cases since mostly number of cases is 1)
select * from civt_dups
group by civtvkey, cirtdate
into temp civt_nodups;
select count(*) num_civtnodups
from civt_nodups;

```

{group by vkey to attach to the inspections file. Note that poll\_incids now gives the number of unique incident dates associated with that vessel on a cirtdate, and hence is probably always equal to 1. Actually poll\_incids is superfluous and never used in the duration file anyway}

```

select civtvkey, cirtdate, count(*) poll_incids
from civt_nodups
group by civtvkey, cirtdate
order by poll_incids desc
into temp cirt_civt0;

```

```

select count(*) num_cirtcivt0
from cirt_civt0;
(drop table cirt_civt0;)

```

{Here we do the last part: join inspection and casualty tables, and Unload 2 Pollution casualty files (one for M/Y and one for just Y)}

```

drop table inspect;
drop table inspect_MY;
drop table inspect_Y;
drop table justvkey;
drop table vesschar;
drop table dur1;
drop table dur2;
drop table dur3;

```

{I. Join hours and casualties.  
vidtcrst sorted by iritvkey, iritdate, and cirt\_civt0 is sorted by civtvkey, cirtdate. Hence there are duplicate vkeys in both and the next join statement produces a small cartesian explosion, but this is ok since we Need this explosion because  
(i) we need to match only where cirtdate>iritdate, and  
(ii) we need to compute MIN duration among the cartesian matches}

```

(This first set of statements for making pollinsp and checking)
select unique vidtcrst.*, cirt_civt0.*
from vidtcrst, outer cirt_civt0
where cirt_civt0.civtvkey=vidtcrst.iritvkey and
      cirt_civt0.cirtdate>=vidtcrst.iritdate
into temp pollinsp;
select count(*) num_pollinsp from pollinsp;
(Count number of unique (iritvkey, iritdate) in pollinsp)
select unique iritvkey, iritdate from pollinsp into temp junk0;
select count(*) numuniq_pollinsp from junk0;
drop table junk0;
(Count number of casualty vkeys that Are in vidtcrst)
select count(*) vidtcrst_keep from pollinsp
where civtvkey is not null;

```

{This is to make the inspections by M/Y and also by just Y to join with the so grouped duration data below for the complete data set}

```
select *, month(iritdate) mo, year(iritdate) ye
from vidtcrst
into temp inspect;
```

{By MY}

```
select
  iritvkey, mo, ye,
  sum(numcases) numcases, sum(hull_hr) hull_hr, sum(mach_hr) mach_hr,
  sum(train_hr) train_hr, sum(extra_hr) extra_hr, sum(textra_hr) textra_hr,
  sum(admin_hr) admin_hr, sum(travel_hr) travel_hr, sum(ttravel_hr) ttravel_hr,
  sum(other_hr) other_hr,
  sum(num_def) num_def,
  (Level II Dummies from Mike: Duration model on only Level II activities
   Here only II.A activities since only U.S. flag MI activities)
  sum(numd2a1) numd2a1, sum(numd2a2) numd2a2, sum(numd2a3) numd2a3,
  (CRST types of inspections: indicators)
  sum(crstannual) crstannual, sum(crstreinsp) crstreinsp,
  sum(crstadmin) crstadmin, sum(crsthull) crsthull, sum(crstcoc) crstcoc,
  sum(crstconstr) crstconstr, sum(crstcert) crstcert,
  sum(crstinit) crstinit, sum(crstmach) crstmach, sum(crstdef) crstdef,
  sum(crstother) crstother, sum(crstrest) crstrest
from inspect
group by iritvkey, mo, ye
into temp inspect_MY;
```

{By Y}

```
select
  iritvkey, ye,
  sum(numcases) numcases, sum(hull_hr) hull_hr, sum(mach_hr) mach_hr,
  sum(train_hr) train_hr, sum(extra_hr) extra_hr, sum(textra_hr) textra_hr,
  sum(admin_hr) admin_hr, sum(travel_hr) travel_hr, sum(ttravel_hr) ttravel_hr,
  sum(other_hr) other_hr,
  sum(num_def) num_def,
  (Level II Dummies from Mike: Duration model on only Level II activities
   Here only II.A activities since only U.S. flag MI activities)
  sum(numd2a1) numd2a1, sum(numd2a2) numd2a2, sum(numd2a3) numd2a3,
  (CRST types of inspections: indicators)
  sum(crstannual) crstannual, sum(crstreinsp) crstreinsp,
  sum(crstadmin) crstadmin, sum(crsthull) crsthull, sum(crstcoc) crstcoc,
  sum(crstconstr) crstconstr, sum(crstcert) crstcert,
  sum(crstinit) crstinit, sum(crstmach) crstmach, sum(crstdef) crstdef,
  sum(crstother) crstother, sum(crstrest) crstrest
from inspect
group by iritvkey, ye
into temp inspect_Y;
```

{Make a table grouped Just by iritvkey for vessel characteristics}

```
select iritvkey
from vidtcrst
group by iritvkey
into temp justvkey;
select count(*) num_justvkey from justvkey;
```

```
select justvkey.iritvkey,
  vidt.service service, vidt.flag flag, vidt.reg_gt reg_gt,
  year(vidt.bld_dt) yearbld, vidt.route route,
  (These have many nulls and are used only for model of inspection if adequate)
  vidt.dblside_typ, vidt.dblbott_typ, vidt.prop_typ, vidt.design, vidt.hull_mat
from justvkey, vidt
where
```

```

justvkey.iritvkey=vidt.vkey and
(
  vidd.service="FREIGHT SHIP" or vidd.service="PUB. TANKSHIP/BARGE" or
  vidd.service="TANK SHIP" or ((vidt.service="PASSENGER" or
  vidd.service="PASSENGER SHIP") and vidd.reg_gt>=100)
) and
vidt.flag="US"
into temp vesschar;
select count(*) num_vesschar from vesschar;

```

(II. Here we compute Duration, and get rid of duplicate values.  
 We Group by Month/Year of IRIT inspection. This is since several Level II activities may be grouped in a bunch but on several different days. We would like to count this bunch only once. There is still an approximation since bunch may overlap between two months. Can't prevent this in SQL  
 Hence we do two data sets:

- (i) Group by Month/Year, as described above, and
- (ii) Group by just Year. This is a smaller data set, and is the correct one for Level II activities that are performed over 1 or 2 years)

(Note: for inspections with no casualty, duration=(1/1/95 - iritdate))

```

(Data set 1: Group by Month/Year)
select      iritvkey, month(iritdate) mo, year(iritdate) ye,
            (cirtdate-iritdate) dur_cas, ("1/1/95"-iritdate) dur_nocas
from pollinsp
into temp dur1;

select iritvkey,mo,ye,min(dur_cas) mindur_cas,max(dur_nocas) dur_nocas
from dur1
group by iritvkey, mo,ye
order by iritvkey,ye,mo
into temp dur2;
select count(*) all_rows_MY_1 from dur2;
select * from dur2 where mindur_cas is not null into temp junk1;
select count(*) with_casualty_MY_1 from junk1;
drop table junk1;

```

```

(Join duration and inspection tables)
select      inspect_MY.*, mindur_cas, dur_nocas,
            service , flag, reg_gt, yearbld, route,
            dblside_typ, dblbott_typ, prop_typ, design, hull_mat
from inspect_MY, dur2, vesschar
where       inspect_MY.iritvkey=dur2.iritvkey and
            inspect_MY.iritvkey=vesschar.iritvkey and
            inspect_MY.mo=dur2.mo and
            inspect_MY.ye=dur2.ye
order by iritvkey,ye,mo
into temp dur3;
select count(*) all_rows_MY_2 from dur3;
select * from dur3 where mindur_cas is not null into temp junk1;
select count(*) with_casualty_MY_2 from junk1;
drop table junk1;

```

```

unload to "/nfs/ttd32/optical/50b/trix.dat/dur_2a2_my.pollall" delimiter ","
select *
from dur3;

```

```

(Check the aggregation)
select      coun: (*)      numrows,      sum(hull_hr)      tot_hull_hr,      sum(mach_hr)

```



```

tot_mach_hr,
    sum(admin_hr) tot_admin_hr
from dur3;
select count(*) numrows, sum(numd2a1) numd2a1, sum(numd2a2) numd2a2,
    sum(numd2a3) numd2a3
from dur3;

drop table dur1;
drop table dur2;
drop table dur3;

(Data set 2: Group by just Year)
select      iritykey, month(iritdate) mo, year(iritdate) ye,
    (cirtdate-iritdate) dur_cas, ("1/1/95"-iritdate) dur_nocas
from pollinsp
into temp dur1;

select iritykey, ye, min(dur_cas) mindur_cas, max(dur_nocas) dur_nocas
from dur1
group by iritykey, ye
order by iritykey, ye
into temp dur2;
select count(*) all_rows_Y_1 from dur2;
select * from dur2 where mindur_cas is not null into temp junk1;
select count(*) with_casualty_Y_1 from junk1;
drop table junk1;

(Join duration and inspection tables)
select      inspect_Y.*, mindur_cas, dur_nocas,
    service , flag, reg_gt, yearbld, route,
    dblside_typ, dblbott_typ, prop_typ, design, hull_mat
from inspect_Y, dur2, vesschar
where      inspect_Y.irtykey=dur2.irtykey and
    inspect_Y.irtykey=vesschar.irtykey and
    inspect_Y.ye=dur2.ye
order by iritykey, ye
into temp dur3;
select count(*) all_rows_Y_2 from dur3;
select * from dur3 where mindur_cas is not null into temp junk1;
select count(*) with_casualty_Y_2 from junk1;
drop table junk1;

unload to "/nfs/ttd32/optical/50b/trix.dat/dur_2a2_y.pollall" delimiter ","
select *
from dur3;

select      count(*)    numrows,    sum(hull_hr)    tot_hull_hr,    sum(mach_hr)
tot_mach_hr,
    sum(admin_hr) tot_admin_hr
from dur3;
select count(*) numrows, sum(numd2a1) numd2a1, sum(numd2a2) numd2a2,
    sum(numd2a3) numd2a3
from dur3;

(print this out for var names to an output file since need also to print for
pollution data set)
output to /users/gawande/dur_a2_poll.out
select *
from dur3
where reg_gt>100000;

```



# DUR\_A3.SQL

{MI Cases}

(After conversation with Wyman Briggs on 18 July, 1994: Use IRIT indicators for inspection types for Level II.A.1-3 activities, and use Peggy Thurber's mapping (grouped by Mike into d31-d39 indicators) for Level III activities)

1. Change inspection from IRIT appropriately: cert\_inspect for COI, reinspect for Reinspection, and hull for hull exam.
2. Change the Unload to file else WILL WRITE OVER)

(Only post 1991 (incl) inspections since duration since last inspection to casualty, and first casualty in Minmod is 02/91)

{

Duration data: The idea is as follows.

The lhs variable is duration from the Last inspection till date of casualty. Analysis will be by Level II activities: (i) 3 MI activities: COI, Annual Vessel Reinspection, Hull Exam, and (ii) 3 PS activities: Annual Foreign Freight Exam, Annual Foreign Tanker Vessel Exam, Annual Foreign Passenger. The same vessel inspected (using same activity) twice is treated as two different vessels, and as two observations (i.e. Hence large data set.)

If the vessel has no casualty after an activity, the lhs takes the value of duration till the next activity of the same type. The problem is that

(a) casualty may not have anything to do with that activity. For, example pri\_nature in CIRT may possess such info. This can (should?) be incorporated by attributing only those casualties to that activity. This requires that pri\_nature should be mapped into Level II activities. This mapping will probably be one(pri\_nature) to many(Level II activities).

(b) should we be taking duration till next activity of the same type, or any activity. If we take into consideration pri\_nature and ascribe only the "casualties connected with that activity" in computing the lhs variable, then we take duration till next activity of the same type if no casualty in the meantime. Else not so easy, since casualty may be of a nature attributable to another kind of activity. Even if pri\_nature used, probably not too easy, since mapping is probably one(pri\_nature) to many or all(Level II activity). So problem still unanswered.

Solution: We take the simple road. All casualties, not just those attributable directly to the Level II activity is considered. This is OK since anyway a large range of inspections map into a Level II activity, and Many pri\_natures map into this set of inspections. Also since some vessels are subject to a Level II activity sooner than others, rather than take the duration between two inspections, in the event of No casualty we take the duration between the inspection date and 1/1/1995. The problem is that the closer the inspection to that date, the shorter the duration recorded. But mainly, it is convenient, the duration so computed does not exceed the duration where there Are casualties, and since the last inspection was in 12/1993, this simplification is not expected to qualitatively change any results.

rhs variable is still number of hours devoted to that activity etc. The main difference is the age of the vessel, which is to be computed at the time of casualty, or at the time of next inspection if no casualty.

)

(For the hours of inspection equation have (i) num\_def from IRIT and (ii) indicators for inspection types for other CRST inspections)

{\*\*\*\*\*HOURS of INSPECTIONS\*\*\*\*\*}

select

irit.vkey iritvkey, irit.dt iritdate,

```

count(*) numcases, sum(hr_hull) hull_hr, sum(hr_mach) mach_hr,
sum(hr_train) train_hr, sum(hr_extra) extra_hr, sum(hr_textra) textra_hr,
sum(hr_admin) admin_hr, sum(hr_travel) travel_hr, sum(hr_ttravel) ttravel_hr,
sum(hr_other) other_hr,
sum(irit.num_def) num_def,
{Sum of Mike's dummies (based on Peggy's mapping) gives the total of
sub-inspections for that Level II activity on that date)
sum(d2a1) numd2a1, sum(d2a2) numd2a2, sum(d2a3) numd2a3,
{CRST types of inspections: indicators)
sum(crst.dannual) crstannual, sum(crst.dreinsp) crstreinsp,
sum(crst.dadmin) crstadmin, sum(crst.dhull) crsthull, sum(crst.dcoc) crstcoc,
sum(crst.dconstr) crstconstr, sum(crst.dcert) crstcert,
sum(crst.dinit) crstinit, sum(crst.dmach) crstmach, sum(crst.ddeficit) crstdef,
sum(crst.dother) crstother, sum(crst.drest) crstrest
from crst, irit

```

(Since first casualty case is 02/91 and duration is from last inspection, only inspections after 1991 are considered. This is unlike the Poisson stuff where inspections after 1989 are considered)

where

```

(activity II.A.3=Hull Exam)
irit.hull_inspect="X" and

irit.micase[1,2]="MI" and
irit.vkey[1,2]="VN" and
crst.case[1,2]="MI" and
(since first casualty case is 02/91 and duration is from last inspec)
crst.case[3,4]>="91" and
crst.case=irit.micase

```

```

group by irit.vkey, irit.dt
into temp crst_temp0;

```

```

select count(*) countcrst_temp0
from crst_temp0;

```

(This file joins CRST\_TEMP0 (agg hours by vkey) to VIDT to identify the foll: service, flag, reg\_gt, bld\_yr, route.)

```

(drop table vidtcrst;)

```

```

select
crst_temp0.*,
vidt.service service, vidt.flag flag, vidt.reg_gt reg_gt,
year(vidt.bld_dt) yearbld, vidt.route route,
(These have many nulls and are used only for model of inspection if adequate)
vidt.dblside_typ, vidt.dblbott_typ, vidt.prop_typ, vidt.design, vidt.hull_mat
from crst_temp0, vidt
where
crst_temp0.iritvkey=vidt.vkey and
(
vidt.service="FREIGHT SHIP" or vidt.service="PUB. TANKSHIP/BARGE" or
vidt.service="TANK SHIP" or ((vidt.service="PASSENGER" or
vidt.service="PASSENGER SHIP") and vidt.reg_gt>=100)
) and
vidt.flag="US"
into temp vidtcrst;

```

```
select count(*)
from vidtcrst;
```

```
(*****Personnel Casualties*****)
```

{ Here, casualty data is assembled from CIVT and CIRT. CIRT, and CIVT are joined by (unique) Mccase and select out only deep-draft vessels (hence a little use of VIDT). Personnel casualties are constructed from CIRT (which has no vkey) and joined to CIVT to associate them with a Vkey. There are duplicate Vkey records in CIVT (of the 28,821 records, 13,548 have unique Vkey), so we need to choose only unique records)

```
{
drop table civt_dups;
drop table civt_nodups;
drop table cirt_civt0;
}
```

```
select
    civt.vkey civtvkey,deaths,missing,injured,cirt.incident_dt cirtdate
```

```
from cirt, civt, vidt
```

(Note that in CIVT, the vkey is not unique (in VIDT vkey is unique). Hence first get temp table civt\_dups (with duplicates). Then check for number of duplicates before grouping by vkey)

```
where
    cirt.mccase=civt.mccase and
    civt.vkey=vidt.vkey and
```

{Jim Law: conversion on July 14, 1994. The following query contracts CIRT to cases that are correct (drop mystery and inconsequential casualties). ctf\_ind=X are inconsequential cases. command\_endorse and command\_cls are mutually exclusive. command\_endorse=X implies that case has been reviewed and fwd to dt/HQ for review. command\_cls=X means that case is done and does not require review at dt/HQ. command\_endorse=X are legit cases and all should be considered. Of the command\_cls=X cases, only those with ctf\_ind=null should be considered since ctf\_ind=X implies an inconsequential case. }

```
(cirt.command_endorse="X"
or (cirt.command_cls="X" and cirt.ctf_ind is null)) and
```

```
(cirt.deaths>0 or cirt.missing>0 or cirt.injured>0) and
( civt.service="FREIGHT SHIP" or civt.service="PUB. TANKSHIP/BARGE"
or civt.service="TANK SHIP" or
((civt.service="PASSENGER" or civt.service="PASSENGER SHIP") and
vidt.reg_gt>=100) )
```

```
into temp civt_dups;
select count(*) num_civtdups
from civt_dups;
```

{This set of statements selects non-duplicate rows in civt\_dup. If group by just civtvkey,incident\_dt, get almost same rows as this}

```
select * from civt_dups
group by civtvkey,cirtdate, deaths,missing,injured
into temp civt_nodups;
select count(*) num_civtnodups
from civt_nodups;
```

(group by vkey to attach to the inspections file. Note that numdates now gives the number of unique incident dates associated with that vessel)

```

select      civtvkey, cirtdate,
            sum(deaths) deaths, sum(missing) missing, sum(injured) injured
from civt_nodups
group by civtvkey, cirtdate
order by deaths desc, injured desc
into temp cirt_civt0;

```

```

select count(*) num_cirtcivt0
from cirt_civt0;
(drop table cirt_civt0;)

```

(Here we do the last part: join inspection and casualty tables, and Unload  
2 Personnel casualty files (one for M/Y and one for just Y))

```

{
drop table persinsp;
drop table inspect;
drop table inspect_MY;
drop table inspect_Y;
drop table justvkey;
drop table vesschar;
drop table durl;
drop table dur2;
drop table dur3;
}

```

{I. Join hours and casualties.

vidtcrst sorted by iritvkey, iritdate, and cirt\_civt0 is sorted by civtvkey,  
cirtdate. Hence there are duplicate vkeys in both and the next join  
statement produces a small cartesian explosion, but this is ok since we Need  
this explosion because  
(i) we need to match only where cirtdate>iritdate, and  
(ii) we need to compute MIN duration among the cartesian matches)

(This first set of statements for making persinsp and checking)

```

select unique vidtcrst.*, cirt_civt0.*
from vidtcrst, outer cirt_civt0
where cirt_civt0.civtvkey=vidtcrst.iritvkey and
      cirt_civt0.cirtdate>=vidtcrst.iritdate
into temp persinsp;
select count(*) num_persinsp from persinsp;
(Count number of unique (iritvkey,iritdate) in persinsp)
select unique iritvkey,iritdate from persinsp into temp junk0;
select count(*) numuniq_persinsp from junk0;
drop table junk0;
(Count number of casualty vkeys that Are in vidtcrst)
select count(*) vidtcrst_keep from persinsp
where civtvkey is not null;

```

(This is to make the inspections by M/Y and also by just Y to join with  
the so grouped duration data below for the complete data set)

```

select *, month(iritdate) mo, year(iritdate) ye
from vidtcrst
into temp inspect;

```

{By MY}

```

select
      iritvkey, mo, ye,
      sum(numcases) numcases, sum(hull_hr) hull_hr, sum(mach_hr) mach_hr,

```

```

sum(train_hr) train_hr, sum(extra_hr) extra_hr, sum(textra_hr) textra_hr,
sum(admin_hr) admin_hr, sum(travel_hr) travel_hr, sum(ttravel_hr) ttravel_hr,
sum(other_hr) other_hr,
sum(num_def) num_def,
(Level II Dummies from Mike: Duration model on only Level II activities
Here only II.A activities since only U.S. flag MI activities)
sum(numd2a1) numd2a1, sum(numd2a2) numd2a2, sum(numd2a3) numd2a3,
(CRST types of inspections: indicators)
sum(crstannual) crstannual, sum(crstreinsp) crstreinsp,
sum(crstadmin) crstadmin, sum(crsthull) crsthull, sum(crstcoc) crstcoc,
sum(crstconstr) crstconstr, sum(crstcert) crstcert,
sum(crstinit) crstinit, sum(crstmach) crstmach, sum(crstdef) crstdef,
sum(crstother) crstother, sum(crstrest) crstrest
from inspect
group by iritvkey, mo, ye
into temp inspect_MY;

```

```

{By Y}
select
  iritvkey, ye,
  sum(numcases) numcases, sum(hull_hr) hull_hr, sum(mach_hr) mach_hr,
  sum(train_hr) train_hr, sum(extra_hr) extra_hr, sum(textra_hr) textra_hr,
  sum(admin_hr) admin_hr, sum(travel_hr) travel_hr, sum(ttravel_hr) ttravel_hr,
  sum(num_def) num_def,
  (Level II Dummies from Mike: Duration model on only Level II activities
  Here only II.A activities since only U.S. flag MI activities)
  sum(numd2a1) numd2a1, sum(numd2a2) numd2a2, sum(numd2a3) numd2a3,
  (CRST types of inspections: indicators)
  sum(crstannual) crstannual, sum(crstreinsp) crstreinsp,
  sum(crstadmin) crstadmin, sum(crsthull) crsthull, sum(crstcoc) crstcoc,
  sum(crstconstr) crstconstr, sum(crstcert) crstcert,
  sum(crstinit) crstinit, sum(crstmach) crstmach, sum(crstdef) - crstdef,
  sum(crstother) crstother, sum(crstrest) crstrest
from inspect
group by iritvkey, ye
into temp inspect_Y;

```

```

(Make a table grouped Just by iritvkey for vessel characteristics)
select iritvkey
from vidtcrst
group by iritvkey
into temp justvkey;
select count(*) num_justvkey from justvkey;

select justvkey.iritvkey,
  vidt.service service, vidt.flag flag, vidt.reg_gt reg_gt,
  year(vidt.bld_dt) yearbld, vidt.route route,
  (These have many nulls and are used only for model of inspection if adequate)
  vidt.dblside_typ, vidt.dblbott_typ, vidt.prop_typ, vidt.design, vidt.hull_mat
from justvkey, vidt
where
  justvkey.iritvkey=vidt.vkey and
  (
    vidt.service="FREIGHT SHIP" or vidt.service="PUB. TANKSHIP/BARGE" or
    vidt.service="TANK SHIP" or ((vidt.service="PASSENGER" or
    vidt.service="PASSENGER SHIP") and vidt.reg_gt>=100)
  ) and
  vidt.flag="US"
into temp vesschar;

```

```
select count(*) num_vesschar from vesschar;
```

(The following comments apply to when I was using Peggy's mapping for Level II activities. But since we are now using IRIT indicators are these comments still applicable? We'll find out, if there is a big difference between the M/Y and the just Y file size)

(II. Here we compute Duration, and get rid of duplicate values.

We Group by Month/Year of IRIT inspection. This is since several Level II activities may be grouped in a bunch but on several different days. We would like to count this bunch only once. There is still an approximation since bunch may overlap between two months. Can't prevent this in SQL Hence we do two data sets:

(i) Group by Month/Year, as described above, and

(ii) Group by just Year. This is a smaller data set, and is the correct one for Level II activities that are performed over 1 or 2 years)

(Note: for inspections with no casualty, duration=(1/1/95 - iritdate))

{Data set 1: Group by Month/Year}

```
select      iritvkey, month(iritdate) mo, year(iritdate) ye,
            (cirtdate-iritdate) dur_cas, ("1/1/95"-iritdate) dur_nocas
from persinsp
into temp dur1;
```

```
select iritvkey,mo,ye,min(dur_cas) mindur_cas,max(dur_nocas) dur_nocas
from dur1
```

```
group by iritvkey, mo,ye
```

```
order by iritvkey,ye,mo
```

```
into temp dur2;
```

```
select count(*) all_rows_MY_1 from dur2;
```

```
select * from dur2 where mindur_cas is not null into temp junk1;
```

```
select count(*) with_casualty_MY_1 from junk1;
```

```
drop table junk1;
```

(Join duration and inspection tables)

```
select      inspect_MY.*, mindur_cas, dur_nocas,
            service , flag, reg_gt, yearbld, route,
            dblside_typ, dblbott_typ, prop_typ, design, hull_mat
from inspect_MY, dur2, vesschar
```

```
where      inspect_MY.iritvkey=dur2.iritvkey and
            inspect_MY.iritvkey=vesschar.iritvkey and
            inspect_MY.mo=dur2.mo and
            inspect_MY.ye=dur2.ye
```

```
order by iritvkey,ye,mo
```

```
into temp dur3;
```

```
select count(*) all_rows_MY_2 from dur3;
```

```
select * from dur3 where mindur_cas is not null into temp junk1;
```

```
select count(*) with_casualty_MY_2 from junk1;
```

```
drop table junk1;
```

```
unload to '/nfs/ttd32/optical/50b/trix.dat/dur_2a3_my.pers' delimiter ','
```

```
select *
```

```
from dur3;
```

(Check the aggregation)

```
select      count(*) numrows,      sum(hull_hr) tot_hull_hr,      sum(mach_hr)
tot_mach_hr,
```

```
sum(admin_hr) tot_admin_hr
```

```
from dur3;
```

```
select count(*) numrows, sum(numd2a1) numd2a1,sum(numd2a2) numd2a2,
```

```
sum(numd2a3) numd2a3
```



```

from dur3;

drop table dur1;
drop table dur2;
drop table dur3;

(Data set 2: Group by just Year)
select      iringkey, month(iringdate) mo, year(iringdate) ye,
            (cirtdate-iringdate) dur_cas, ("1/1/95"-iringdate) dur_nocas
from persinsp
into temp dur1;

select iringkey, ye, min(dur_cas) mindur_cas, max(dur_nocas) dur_nocas
from dur1
group by iringkey, ye
order by iringkey, ye
into temp dur2;
select count(*) all_rows_Y_1 from dur2;
select * from dur2 where mindur_cas is not null into temp junk1;
select count(*) with_casualty_Y_1 from junk1;
drop table junk1;

(Join duration and inspection tables)
select      inspect_Y.*, mindur_cas, dur_nocas,
            service , flag, reg_gt, yearbld, route,
            dblside_typ, dblbott_typ, prop_typ, design, hull_mat
from inspect_Y, dur2, vesschar
where      inspect_Y.iringkey=dur2.iringkey and
            inspect_Y.iringkey=vesschar.iringkey and
            inspect_Y.ye=dur2.ye
order by iringkey, ye
into temp dur3;
select count(*) all_rows_Y_2 from dur3;
select * from dur3 where mindur_cas is not null into temp junk1;
select count(*) with_casualty_Y_2 from junk1;
drop table junk1;

unload to "/nfs/ttd32/optical/50b/trix.dat/dur_2a3_y.pers" delimiter ","
select *
from dur3;

select      count(*)    numrows,      sum(hull_hr)    tot_hull_hr,      sum(mach_hr)
tot_mach_hr,
            sum(admin_hr) tot_admin_hr
from dur3;
select count(*) numrows, sum(numd2a1) numd2a1, sum(numd2a2) numd2a2,
            sum(numd2a3) numd2a3
from dur3;

(print this out for var names to an output file since need also to print for
pollution data set)
output to /users/gawande/dur_a3_pers.out
select *
from dur3
where reg_gt>100000;

```

```

{*****Pollution Casualties*****}

```

(Be sure to run MIDUR1 and MIDUR2 before these two progs)

{ Here, pollution casualty data is assembled from CIVT and CIRT. CIRT, and CIVT are joined by (unique) Mccase and select out only deep-draft vessels (hence a little use of VIDT). Pollution incidents are constructed from CIRT (which has no vkey) and joined to CIVT to associate them with a Vkey. There are duplicate Vkey records in CIVT (of the 28,821 records, 13,548 have unique Vkey), so we need to choose only unique records)

```
drop table civt_dups;
drop table civt_nodups;
drop table cirt_civt0;
```

```
select
    civt.vkey civtvkey, cirt.incident_dt cirtdate
```

```
from cirt, civt, vidt
```

(Note that using VIDT for the reg\_gt>100 info and hence need Unique in select statement since in CIVT, the vkey is not unique (in VIDT vkey is unique))

where

```
    cirt.mccase=civt.mccase and
    civt.vkey=vidt.vkey and
```

(Jim Law: conversion on July 14, 1994. The following query contracts CIRT to cases that are correct (drop mystery and inconsequential casualties). ctf\_ind=X are inconsequential cases. command\_endorse and command\_cls are mutually exclusive. command\_endorse=X implies that case has been reviewed and fwd to dt/HQ for review. command\_cls=X means that case is done and does not require review at dt/HQ. command\_endorse=X are legit cases and all should be considered. Of the command\_cls=X cases, only those with ctf\_ind=null should be considered since ctf\_ind=X implies an inconsequential case. )

(Jim Law: conversion on July 14, 1994. The following query contracts CIRT to cases that are correct (drop mystery and inconsequential casualties). ctf\_ind=X are inconsequential cases. command\_endorse and command\_cls are mutually exclusive. command\_endorse=X implies that case has been reviewed and fwd to dt/HQ for review. command\_cls=X means that case is done and does not require review at dt/HQ. command\_endorse=X are legit cases and all should be considered. Of the command\_cls=X cases, only those with ctf\_ind=null should be considered since ctf\_ind=X implies an inconsequential case. )

```
(cirt.command_endorse="X"
or (cirt.command_cls="X" and cirt.ctf_ind is null)) and
```

```
cirt.mcpd_ind>=1 and
(cirt.pol_ind="X" or pri_nature="POLLUTION") and
```

(To select Only BAD cases, unblock this statement)  
(severity in ("MAJOR", "POTENT", "MEDIUM") and)

```
( civt.service="FREIGHT SHIP" or civt.service="PUB. TANKSHIP/BARGE"
  or civt.service="TANK SHIP" or
  ((civt.service="PASSENGER" or civt.service="PASSENGER SHIP") and
    vidt.reg_gt>=100) )
into temp civt_dups;
select count(*) num_civtdups
from civt_dups;
```

(This set of statements selects non-duplicate rows in civt\_dup. Although this is an approximation of duplicates, its not a bad one. Can't really

```

    check for the pollution cases since mostly number of cases is 1)
select * from civtv_dups
group by civtvkey, cirtdate
into temp civtv_nodups;
select count(*) num_civtnodups
from civtv_nodups;

```

(group by vkey to attach to the inspections file. Note that poll\_incids now gives the number of unique incident dates associated with that vessel on a cirtdate, and hence is probably always equal to 1. Actually poll\_incids is superfluous and never used in the duration file anyway)

```

select civtvkey, cirtdate, count(*) poll_incids
from civtv_nodups
group by civtvkey, cirtdate
order by poll_incids desc
into temp cirt_civtv0;

```

```

select count(*) num_cirtcivtv0
from cirt_civtv0;
(drop table cirt_civtv0;)

```

(Here we do the last part: join inspection and casualty tables, and Unload 2 Pollution casualty files (one for M/Y and one for just Y))

```

drop table inspect;
drop table inspect_MY;
drop table inspect_Y;
drop table justvkey;
drop table vesschar;
drop table dur1;
drop table dur2;
drop table dur3;

```

(I. Join hours and casualties.

vidtcrst sorted by iritvkey, iritdate, and cirt\_civtv0 is sorted by civtvkey, cirtdate. Hence there are duplicate vkeys in both and the next join statement produces a small cartesian explosion, but this is ok since we Need this explosion because

- (i) we need to match only where cirtdate>iritdate, and
- (ii) we need to compute MIN duration among the cartesian matches)

(This first set of statements for making pollinsp and checking)

```

select unique vidtcrst.*, cirt_civtv0.*
from vidtcrst, outer cirt_civtv0
where cirt_civtv0.civtvkey=vidtcrst.iritvkey and
      cirt_civtv0.cirtdate>=vidtcrst.iritdate
into temp pollinsp;
select count(*) num_pollinsp from pollinsp;
(Count number of unique (iritvkey,iritdate) in pollinsp)
select unique iritvkey,iritdate from pollinsp into temp junk0;
select count(*) numuniq_pollinsp from junk0;
drop table junk0;
(Count number of casualty vkeys that Are in vidtcrst)
select count(*) vidtcrst_keep from pollinsp
where civtvkey is not null;

```

(This is to make the inspections by M/Y and also by just Y to join with the so grouped duration data below for the complete data set)

```
select *, month(iritdate) mo, year(iritdate) ye
from vidtcrst
into temp inspect;
```

{By MY}

```
select
  iritvkey, mo, ye,
  sum(numcases) numcases, sum(hull_hr) hull_hr, sum(mach_hr) mach_hr,
  sum(train_hr) train_hr, sum(extra_hr) extra_hr, sum(textra_hr) textra_hr,
  sum(admin_hr) admin_hr, sum(travel_hr) travel_hr, sum(ttravel_hr) ttravel_hr,
  sum(other_hr) other_hr,
  sum(num_def) num_def,
  (Level II Dummies from Mike: Duration model on only Level II activities
  Here only II.A activities since only U.S. flag MI activities)
  sum(numd2a1) numd2a1, sum(numd2a2) numd2a2, sum(numd2a3) numd2a3,
  (CRST types of inspections: indicators)
  sum(crstannual) crstannual, sum(crstreinsp) crstreinsp,
  sum(crstadmin) crstadmin, sum(crsthull) crsthull, sum(crstcoc) crstcoc,
  sum(crstconstr) crstconstr, sum(crstcert) crstcert,
  sum(crstinit) crstinit, sum(crstmach) crstmach, sum(crstdef) crstdef,
  sum(crstother) crstother, sum(crstrest) crstrest
from inspect
group by iritvkey, mo, ye
into temp inspect_MY;
```

{By Y}

```
select
  iritvkey, ye,
  sum(numcases) numcases, sum(hull_hr) hull_hr, sum(mach_hr) mach_hr,
  sum(train_hr) train_hr, sum(extra_hr) extra_hr, sum(textra_hr) textra_hr,
  sum(admin_hr) admin_hr, sum(travel_hr) travel_hr, sum(ttravel_hr) ttravel_hr,
  sum(other_hr) other_hr,
  sum(num_def) num_def,
  (Level II Dummies from Mike: Duration model on only Level II activities
  Here only II.A activities since only U.S. flag MI activities)
  sum(numd2a1) numd2a1, sum(numd2a2) numd2a2, sum(numd2a3) numd2a3,
  (CRST types of inspections: indicators)
  sum(crstannual) crstannual, sum(crstreinsp) crstreinsp,
  sum(crstadmin) crstadmin, sum(crsthull) crsthull, sum(crstcoc) crstcoc,
  sum(crstconstr) crstconstr, sum(crstcert) crstcert,
  sum(crstinit) crstinit, sum(crstmach) crstmach, sum(crstdef) crstdef,
  sum(crstother) crstother, sum(crstrest) crstrest
from inspect
group by iritvkey, ye
into temp inspect_Y;
```

(Make a table grouped Just by iritvkey for vessel characteristics)

```
select iritvkey
from vidtcrst
group by iritvkey
into temp justvkey;
select count(*) num_justvkey from justvkey;
```

```
select justvkey.iritvkey,
  vidt.service service, vidt.flag flag, vidt.reg_gt reg_gt,
  year(vidt.bld_dt) yearbld, vidt.route route,
  (These have many nulls and are used only for model of inspection if adequate)
  vidt.dblside_typ, vidt.dblbott_typ, vidt.prop_typ, vidt.design, vidt.hull_mat
from justvkey, vidt
where
```

```

justvkey.iritvkey=vidt.vkey and
(
  viddt.service="FREIGHT SHIP" or viddt.service="PUB. TANKSHIP/BARGE" or
  viddt.service="TANK SHIP" or ((vidt.service="PASSENGER" or
  viddt.service="PASSENGER SHIP") and viddt.reg_gt>=100)
) and
vidt.flag="US"
into temp vesschar;
select count(*) num_vesschar from vesschar;

```

(II. Here we compute Duration, and get rid of duplicate values.  
 We Group by Month/Year of IRIT inspection. This is since several Level II activities may be grouped in a bunch but on several different days. We would like to count this bunch only once. There is still an approximation since bunch may overlap between two months. Can't prevent this in SQL  
 Hence we do two data sets:  
 (i) Group by Month/Year, as described above, and  
 (ii) Group by just Year. This is a smaller data set, and is the correct one for Level II activities that are performed over 1 or 2 years)

(Note: for inspections with no casualty, duration=(1/1/95 - iritdate))

```

(Data set 1: Group by Month/Year)
select      iritvkey, month(iritdate) mo, year(iritdate) ye,
            (cirtdate-iritdate) dur_cas, ("1/1/95"-iritdate) dur_nocas
from pollinsp
into temp dur1;

```

```

select iritvkey,mo,ye,min(dur_cas) mindur_cas,max(dur_nocas) dur_nocas
from dur1
group by iritvkey, mo,ye
order by iritvkey,ye,mo
into temp dur2;
select count(*) all_rows_MY_1 from dur2;
select * from dur2 where mindur_cas is not null into temp junk1;
select count(*) with_casualty_MY_1 from junk1;
drop table junk1;

```

```

(Join duration and inspection tables)
select      inspect_MY.*, mindur_cas, dur_nocas,
            service , flag, reg_gt, yearbld, route,
            dblside_typ, dblbott_typ, prop_typ, design, hull_mat
from inspect_MY, dur2, vesschar
where       inspect_MY.iritvkey=dur2.iritvkey and
            inspect_MY.iritvkey=vesschar.iritvkey and
            inspect_MY.mo=dur2.mo and
            inspect_MY.ye=dur2.ye
order by iritvkey,ye,mo
into temp dur3;
select count(*) all_rows_MY_2 from dur3;
select * from dur3 where mindur_cas is not null into temp junk1;
select count(*) with_casualty_MY_2 from junk1;
drop table junk1;

```

```

unload to "/nfs/ttd32/optical/50b/trix.dat/dur_2a3_my.pollall" delimiter ","
select *
from dur3;

```

```

(Check the aggregation)
select      count(*)    numrows,      sum(hull_hr)    tot_hull_hr,      sum(mach_hr)

```

```

tot_mach_hr,
    sum(admin_hr) tot_admin_hr
from dur3;
select count(*) numrows, sum(numd2a1) numd2a1, sum(numd2a2) numd2a2,
    sum(numd2a3) numd2a3
from dur3;

drop table dur1;
drop table dur2;
drop table dur3;

(Data set 2: Group by just Year)
select      iritvkey, month(iritdate) mo, year(iritdate) ye,
    (cirtdate-iritdate) dur_cas, ('1/1/95'-iritdate) dur_nocas
from pollinsp
into temp dur1;

select iritvkey, ye, min(dur_cas) mindur_cas, max(dur_nocas) dur_nocas
from dur1
group by iritvkey, ye
order by iritvkey, ye
into temp dur2;
select count(*) all_rows_Y_1 from dur2;
select * from dur2 where mindur_cas is not null into temp junk1;
select count(*) with_casualty_Y_1 from junk1;
drop table junk1;

(Join duration and inspection tables)
select      inspect_Y.*, mindur_cas, dur_nocas,
    service , flag, reg_gt, yearbld, route,
    dblside_typ, dblbott_typ, prop_typ, design, hull_mat
from inspect_Y, dur2, vesschar
where      inspect_Y.iritvkey=dur2.iritvkey and
    inspect_Y.iritvkey=vesschar.iritvkey and
    inspect_Y.ye=dur2.ye
order by iritvkey, ye
into temp dur3;
select count(*) all_rows_Y_2 from dur3;
select * from dur3 where mindur_cas is not null into temp junk1;
select count(*) with_casualty_Y_2 from junk1;
drop table junk1;

unload to "/nfs/ttd32/optical/50b/trix.dat/dur_2a3_y.pollall" delimiter ","
select *
from dur3;

select      count(*)    numrows,    sum(hull_hr)    tot_hull_hr,    sum(mach_hr)
tot_mach_hr,
    sum(admin_hr) tot_admin_hr
from dur3;
select count(*) numrows, sum(numd2a1) numd2a1, sum(numd2a2) numd2a2,
    sum(numd2a3) numd2a3
from dur3;

(print this out for var names to an output file since need also to print for
pollution data set)
output to /users/gawande/dur_a3_poll.out
select *
from dur3
where reg_gt>100000;

```



# DUR\_B.SQL

(PS Cases)

{Use Peggy Thurber's mapping for Both Level II and Level III data sets.  
This is different from the MI case, where IRIT's major activity indicators were used to select Level II.A activities. Since II.B activities are differentiated only by service, we use Peggy's mapping since the data sets will be disaggregated by service. We need to construct JUST ONE data set for Level II activities, and then select out the B1, B2, and B3 data sets in Gauss.}

- (1. Change the Unload to file else WILL WRITE OVER
2. Change the Output To files else WILL WRITE OVER )

{Only post 1991 (incl) inspections since duration since last inspection to casualty, and first casualty in Minmod is 02/91}

{ Duration data: The idea is as follows: See the MI duration programs dur\_al for this }

(\*\*\*\*\*HOURS of INSPECTIONS\*\*\*\*\*)

select

avst.vkey avstvkey, brit.act\_dt britdate,  
count(\*) numcases, sum(hr\_reg) reg\_hr, sum(hr\_res) res\_hr,  
sum(hr\_boat) boat\_hr, sum(hr\_air) air\_hr,  
sum(hr\_regadmin) admin\_hr, sum(hr\_regtv1) travel\_hr,  
sum(hr\_other) other\_hr,  
sum(num\_def) avst\_def, sum(num\_act) avst\_act,  
{Level II and III Dummies from Mike based on Peggy Thurber's mapping  
Here only II.B activities since only PS activities}  
sum(d2b1) numd2b1, sum(d2b2) numd2b2, sum(d2b3) numd2b3,  
(Note that 35, 36, and 38 for US Flag only needed, but am including it here)  
sum(d31) numd31, sum(d32) numd32, sum(d33) numd33, sum(d34) numd34,  
sum(d35) numd35, sum(d36) numd36, sum(d37) numd37, sum(d38) numd38,  
sum(d39) numd39  
from brst, avst, brit

where

{Level II.B activities are all in one data set. Will disagg by service in Gauss later}

(brst.d2b1=1 or brst.d2b2=1 or brst.d2b3=1) and

{since first casualty case is 02/91 and duration is from last inspec}  
brst.pscase[3,4]>="91" and  
brst.pscase=avst.pscase and  
brst.pscase=brit.pscase

group by avst.vkey, brit.act\_dt  
into temp brst\_temp0;

select count(\*) countbrst\_temp0  
from brst\_temp0;

{This file joins BRST\_TEMP0 (agg hours by vkey) to VIDT to identify the foll:  
service, flag, reg\_gt, bld\_yr, route.}

{drop table vidtbrst;}

select



```

brst_temp0.*,
vidt.service vidtservice, vidd.flag viddflag, vidd.reg_gt reg_gt,
year(vidt.bld_dt) yearbld, vidd.route route,
(These have many nulls and are used only for model of inspection if adequate)
vidt.dblside_typ, vidd.dblbott_typ, vidd.prop_typ, vidd.design, vidd.hull_mat
from brst_temp0, vidd
where
brst_temp0.avstvkey=vidt.vkey and
(
(vidt.flag="US" and (
vidt.service="FREIGHT SHIP" or vidd.service="PUB. TANKSHIP/BARGE" or
vidt.service="TANK SHIP" or ((vidt.service="PASSENGER" or
vidt.service="PASSENGER SHIP") and vidd.reg_gt>=100) ) )
or
(vidt.flag not in ("US") and (
vidt.service="FREIGHT SHIP" or vidd.service="PUB. TANKSHIP/BARGE" or
vidt.service="TANK SHIP" or vidd.service="PASSENGER" or
vidt.service="PASSENGER SHIP" ) )
)
into temp viddbrst;

select count(*)
from viddbrst;

```

{\*\*\*\*\*Personnel Casualties\*\*\*\*\*}

{ Here, casualty data is assembled from CIVT and CIRT. CIRT, and CIVT are joined by (unique) Mccase and select out only deep-draft vessels (hence a little use of VIDT). Personnel casualties are constructed from CIRT (which has no vkey) and joined to CIVT to associate them with a Vkey. There are duplicate Vkey records in CIVT (of the 28,821 records, 13,548 have unique Vkey), so we need to choose only unique records)

```

{
drop table civt_dups;
drop table civt_nodups;
drop table cirt_civt0;
}
select
civt.vkey civtvkey,deaths,missing,injured,cirt.incident_dt cirtdate

```

```

from cirt, civt, vidd
(Note that in CIVT, the vkey is not unique (in VIDT vkey is unique). Hence
first get temp table civt_dups (with duplicates). Then check for number
of duplicates before grouping by vkey)

```

```

where
cirt.mccase=civt.mccase and
civt.vkey=vidt.vkey and

```

{Jim Law: conversion on July 14, 1994. The following query contracts CIRT to cases that are correct (drop mystery and inconsequential casualties). ctf\_ind=X are inconsequential cases. command\_endorse and command\_cls are mutually exclusive. command\_endorse=X implies that case has been reviewed and fwd to dt/HQ for review. command\_cls=X means that case is done and does not require review at dt/HQ. command\_endorse=X are legit cases and all should be considered. Of the command\_cls=X cases, only those with ctf\_ind=null should be considered since ctf\_ind=X implies an inconsequential case. }

```

(cirt.command_endorse="X"
or (cirt.command_cls="X" and cirt.ctf_ind is null)) and

```

(Since inspections program selects correctly, here select larger subset so that don't miss out anything when merge. Passenger<100 also selected)

```
(cirt.deaths>0 or cirt.missing>0 or cirt.injured>0) and
( cirt.service="FREIGHT SHIP" or cirt.service="PUB. TANKSHIP/BARGE"
  or cirt.service="TANK SHIP" or
  cirt.service="PASSENGER" or cirt.service="PASSENGER SHIP")
into temp civt_dups;
select count(*) num_civtdups
from civt_dups;
```

(This set of statements selects non-duplicate rows in civt\_dup. If group by just civtvkey, incident\_dt, get almost same rows as this)

```
select * from civt_dups
group by civtvkey, cirtdate, deaths, missing, injured
into temp civt_nodups;
select count(*) num_civtnodups
from civt_nodups;
```

(group by vkey to attach to the inspections file. Note that numdates now gives the number of unique incident dates associated with that vessel)

```
select      civtvkey, cirtdate,
            sum(deaths) deaths, sum(missing) missing, sum(injured) injured
from civt_nodups
group by civtvkey, cirtdate
order by deaths desc, injured desc
into temp cirt_civt0;
```

```
select count(*) num_cirtcivt0
from cirt_civt0;
(drop table cirt_civt0;)
```

(Here we do the last part: join inspection and casualty tables, and Unload 2 Personnel casualty files (one for M/Y and one for just Y))

```
{
drop table persinsp;
drop table inspect;
drop table inspect_MY;
drop table inspect_Y;
drop table justvkey;
drop table vesschar;
drop table durl1;
drop table dur2;
drop table dur3;
}
```

{I. Join hours and casualties.

vidtbrst sorted by avstvkey, britdate, and cirt\_civt0 is sorted by civtvkey, cirtdate. Hence there are duplicate vkeys in both and the next join statement produces a small cartesian explosion, but this is ok since we need this explosion because

- (i) we need to match only where cirtdate>britdate, and
- (ii) we need to compute MIN duration among the cartesian matches)

(This first set of statements for making persinsp and checking)

```
select unique vidtbrst.*, cirt_civt0.*
from vidtbrst, outer cirt_civt0
where cirt_civt0.civtvkey=vidtbrst.avstvkey and
      cirt_civt0.cirtdate>=vidtbrst.britdate
into temp persinsp;
```

```

select count(*) num_persinsp from persinsp;
(Count number of unique (avstvkey,britdate) in persinsp)
select unique avstvkey,britdate from persinsp into temp junk0;
select count(*) numuniq_persinsp from junk0;
drop table junk0;
(Count number of casualty vkeys that Are in vidtbrst)
select count(*) vidtbrst_keep from persinsp
where civtvkey is not null;

```

{This is to make the inspections by M/Y and also by just Y to join with the so grouped duration data below for the complete data set}

```

select *, month(britdate) mo,year(britdate) ye
from vidtbrst
into temp inspect;

```

{By MY}

```

select
  avstvkey, mo, ye,
  sum(numcases) numcases, sum(reg_hr) reg_hr, sum(res_hr) res_hr,
  sum(boat_hr) boat_hr, sum(air_hr) air_hr,
  sum(admin_hr) admin_hr, sum(travel_hr) travel_hr, sum(other_hr) other_hr,
  sum(avst_def) avst_def, sum(avst_act) avst_act,
  {Level II and III Dummies from Mike based on Peggy Thurber's mapping
  Here only II.B activities since only PS activities}
  sum(numd2b1) numd2b1, sum(numd2b2) numd2b2, sum(numd2b3) numd2b3,
  {Note that 35, 36, and 38 for US Flag only needed, but am including it here}
  sum(numd31) numd31, sum(numd32) numd32, sum(numd33) numd33, sum(numd34) numd34,
  sum(numd35) numd35, sum(numd36) numd36, sum(numd37) numd37, sum(numd38) numd38,
  sum(numd39) numd39
from inspect
group by avstvkey, mo, ye
into temp inspect_MY;

```

{By Y}

```

select
  avstvkey, ye,
  sum(numcases) numcases, sum(reg_hr) reg_hr, sum(res_hr) res_hr,
  sum(boat_hr) boat_hr, sum(air_hr) air_hr,
  sum(admin_hr) admin_hr, sum(travel_hr) travel_hr, sum(other_hr) other_hr,
  sum(avst_def) avst_def, sum(avst_act) avst_act,
  {Level II and III Dummies from Mike based on Peggy Thurber's mapping
  Here only II.B activities since only PS activities}
  sum(numd2b1) numd2b1, sum(numd2b2) numd2b2, sum(numd2b3) numd2b3,
  {Note that 35, 36, and 38 for US Flag only needed, but am including it here}
  sum(numd31) numd31, sum(numd32) numd32, sum(numd33) numd33, sum(numd34) numd34,
  sum(numd35) numd35, sum(numd36) numd36, sum(numd37) numd37, sum(numd38) numd38,
  sum(numd39) numd39
from inspect
group by avstvkey, ye
into temp inspect_Y;

```

{Make a table grouped Just by avstvkey for vessel characteristics}

```

select avstvkey
from vidtbrst
group by avstvkey
into temp justvkey;
select count(*) num_justvkey from justvkey;

```

```

select
  justvkey.avstvkey,
  vidt.service vidtservice, vidt.flag vidtflag, vidt.reg_gt reg_gt,
  year(vidt.bld_dt) yearbld, vidt.route route,
  {These have many nulls and are used only for model of inspection if adequate}
  vidt.dblside_typ, vidt.dblbott_typ, vidt.prop_typ, vidt.design, vidt.hull_mat
from justvkey, vidt
where
  justvkey.avstvkey=vidt.vkey and
  (
    {vidt.flag="US" and (
      vidt.service="FREIGHT SHIP" or vidt.service="PUB. TANKSHIP/BARGE" or
      vidt.service="TANK SHIP" or ((vidt.service="PASSENGER" or
      vidt.service="PASSENGER SHIP") and vidt.reg_gt>=100) ) )
    or
    (vidt.flag not in ("US") and (
      vidt.service="FREIGHT SHIP" or vidt.service="PUB. TANKSHIP/BARGE" or
      vidt.service="TANK SHIP" or vidt.service="PASSENGER" or
      vidt.service="PASSENGER SHIP" ) )
  )
into temp vesschar;
select count(*) num_vesschar from vesschar;

```

{The following comments apply to Peggy's mapping for Level II activities.  
We'll find out, if there is a big difference  
between the M/Y and the just Y file size}

{II. Here we compute Duration, and get rid of duplicate values.

We Group by Month/Year of BRIT inspection. This is since several Level II activities may be grouped in a bunch but on several different days. We would like to count this bunch only once. There is still an approximation since bunch may overlap between two months. Can't prevent this in SQL  
Hence we do two data sets:

- (i) Group by Month/Year, as described above, and
- (ii) Group by just Year. This is a smaller data set, and is the correct one for Level II activities that are performed over 1 or 2 years}

{Note: for inspections with no casualty, duration=(1/1/95 - britdate)}

{Data set 1: Group by Month/Year}

```

select      avstvkey, month(britdate) mo, year(britdate) ye,
            (cirtdate-britdate) dur_cas, ("1/1/95"-britdate) dur_nocas
from persinsp
into temp dur1;

```

```

select avstvkey,mo,ye,min(dur_cas) mindur_cas,max(dur_nocas) dur_nocas
from dur1

```

```

group by avstvkey, mo,ye

```

```

order by avstvkey,ye,mo

```

```

into temp dur2;

```

```

select count(*) all_rows_MY_1 from dur2;

```

```

select * from dur2 where mindur_cas is not null into temp junk1;

```

```

select count(*) with_casualty_MY_1 from junk1;

```

```

drop table junk1;

```

{Join duration and inspection tables}

```

select      inspect_MY.*, mindur_cas, dur_nocas,
            vidtservice, vidtflag, reg_gt, yearbld, route,
            dblside_typ, dblbott_typ, prop_typ, design, hull_mat
from inspect_MY, dur2, vesschar
where      inspect_MY.avstvkey=dur2.avstvkey and

```

```

        inspect_MY.avstvkey=vesschar.avstvkey and
        inspect_MY.mo=dur2.mo and
        inspect_MY.ye=dur2.ye
order by avstvkey,ye,mo
into temp dur3;
select count(*) all_rows_MY_2 from dur3;
select * from dur3 where mindur_cas is not null into temp junk1;
select count(*) with_casualty_MY_2 from junk1;
drop table junk1;

unload to "/nfs/ttd32/optical/50b/trix.dat/dur_2b_my.pers" delimiter ","
select *
from dur3;

select      sum(numcases) numcases,sum(reg_hr) tot_reg,sum(res_hr) tot_res,
            sum(admin_hr) tot_admin
from dur3;
select count(*) numrows, sum(numd2b1) numd2b1,sum(numd2b2) numd2b2,
            sum(numd2b3) numd2b3
from dur3;

drop table dur1;
drop table dur2;
drop table dur3;

(Data set 2: Group by just Year)
select      avstvkey, month(britdate) mo,year(britdate) ye,
            (cirtdate-britdate) dur_cas, ("1/1/95"-britdate) dur_nocas
from persinsp
into temp dur1;

select avstvkey,ye,min(dur_cas) mindur_cas,max(dur_nocas) dur_nocas
from dur1
group by avstvkey,ye
order by avstvkey,ye
into temp dur2;
select count(*) all_rows_Y_1 from dur2;
select * from dur2 where mindur_cas is not null into temp junk1;
select count(*) with_casualty_Y_1 from junk1;
drop table junk1;

(Join duration and inspection tables)
select      inspect_Y.*, mindur_cas, dur_nocas,
            vidtservice, vidtflag, reg_gt, yearbld, route,
            dblside_typ, dblbott_typ, prop_typ, design, hull_mat
from inspect_Y, dur2, vesschar
where      inspect_Y.avstvkey=dur2.avstvkey and
            inspect_Y.avstvkey=vesschar.avstvkey and
            inspect_Y.ye=dur2.ye
order by avstvkey,ye
into temp dur3;
select count(*) all_rows_Y_2 from dur3;
select * from dur3 where mindur_cas is not null into temp junk1;
select count(*) with_casualty_Y_2 from junk1;
drop table junk1;

unload to "/nfs/ttd32/optical/50b/trix.dat/dur_2b_y.pers" delimiter ","
select *
from dur3;

```

```

select      sum(numcases) numcases, sum(reg_hr) tot_reg, sum(res_hr) tot_res,
            sum(admin_hr) tot_admin
from dur3;
select count(*) numrows, sum(numd2b1) numd2b1, sum(numd2b2) numd2b2,
            sum(numd2b3) numd2b3
from dur3;

```

```

(print this out for var names to an output file since need also to print for
 pollution data set)
output to /users/gawande/dur_b_pers.out
select *
from dur3
where reg_gt>100000;

```

{\*\*\*\*\*Pollution Casualties\*\*\*\*\*}

{Be sure to run MIDUR1 and MIDUR2 before these two progs}

{ Here, pollution casualty data is assembled from CIVT and CIRT. CIRT, and CIVT are joined by (unique) Mccase and select out only deep-draft vessels (hence a little use of VIDT). Pollution incidents are constructed from CIRT (which has no vkey) and joined to CIVT to associate them with a Vkey. There are duplicate Vkey records in CIVT (of the 28,821 records, 13,548 have unique Vkey), so we need to choose only unique records)

```

drop table civt_dups;
drop table civt_nodups;
drop table cirt_civt0;

```

```

select
    civt.vkey civtvkey, cirt.incident_dt cirtdate
from cirt, civt, vidt
(Note that using VIDT for the reg_gt>100 info and hence need Unique in select
 statement since in CIVT, the vkey is not unique (in VIDT vkey is unique))
where
    cirt.mccase=civt.mccase and
    civt.vkey=vidt.vkey and

```

{Jim Law: conversion on July 14, 1994. The following query contracts CIRT to cases that are correct (drop mystery and inconsequential casualties). ctf\_ind=X are inconsequential cases. command\_endorse and command\_cls are mutually exclusive. command\_endorse=X implies that case has been reviewed and fwd to dt/HQ for review. command\_cls=X means that case is done and does not require review at dt/HQ. command\_endorse=X are legit cases and all should be considered. Of the command\_cls=X cases, only those with ctf\_ind=null should be considered since ctf\_ind=X implies an inconsequential case. }

{Jim Law: conversion on July 14, 1994. The following query contracts CIRT to cases that are correct (drop mystery and inconsequential casualties). ctf\_ind=X are inconsequential cases. command\_endorse and command\_cls are mutually exclusive. command\_endorse=X implies that case has been reviewed and fwd to dt/HQ for review. command\_cls=X means that case is done and does not require review at dt/HQ. command\_endorse=X are legit cases and all should be considered. Of the command\_cls=X cases, only those with ctf\_ind=null should be considered since ctf\_ind=X implies an inconsequential case. }

```

(cirt.command_endorse="X"
or (cirt.command_cls="X" and cirt.ctf_ind is null)) and

cirt.mcpd_ind>=1 and
(cirt.pol_ind="X" or pri_nature="POLLUTION") and

{To select Only BAD cases, unblock this statement}
(severity in ("MAJOR","POTENT","MEDIUM") and)

( civt.service="FREIGHT SHIP" or civt.service="PUB. TANKSHIP/BARGE"
or civt.service="TANK SHIP" or
((civt.service="PASSENGER" or civt.service="PASSENGER SHIP") and
vidt.reg_gt>=100) )
into temp civt_dups;
select count(*) num_civtdups
from civt_dups;

{This set of statements selects non-duplicate rows in civt_dup. Although
this is an approximation of duplicates, its not a bad one. Can't really
check for the pollution cases since mostly number of cases is 1}
select * from civt_dups
group by civtvkey,cirtdate
into temp civt_nodups;
select count(*) num_civtnodups
from civt_nodups;

{group by vkey to attach to the inspections file. Note that poll_incids now
gives the number of unique incident dates associated with that vessel on
a cirtdate, and hence is probably always equal to 1.
Actually poll_incids is superfluous and never used in the duration file anyway}

select civtvkey, cirtdate, count(*) poll_incids
from civt_nodups
group by civtvkey, cirtdate
order by poll_incids desc
into temp cirt_civt0;

select count(*) num_cirtcivt0
from cirt_civt0;
(drop table cirt_civt0;)

{Here we do the last part: join inspection and casualty tables, and Unload
2 Pollution casualty files (one for M/Y and one for just Y)}

drop table inspect;
drop table inspect_MY;
drop table inspect_Y;
drop table justvkey;
drop table vesschar;
drop table dur1;
drop table dur2;
drop table dur3;

{I. Join hours and casualties.
vidtbrst sorted by avstvkey,britdate, and cirt_civt0 is sorted by civtvkey,
cirtdate. Hence there are duplicate vkeys in both and the next join
statement produces a small cartesian explosion, but this is ok since we Need
this explosion because
(i) we need to match only where cirtdate>britdate, and
(ii) we need to compute MIN duration among the cartesian matches}

```

```

(This first set of statements for making pollinsp and checking)
select unique vidtbrst.*, cirt_civt0.*
from vidtbrst, outer cirt_civt0
where cirt_civt0.civtvkey=vidtbrst.avstvkey and
      cirt_civt0.cirtdate>=vidtbrst.britdate
into temp pollinsp;
select count(*) num_pollinsp from pollinsp;
(Count number of unique (avstvkey,britdate) in pollinsp)
select unique avstvkey,britdate from pollinsp into temp junk0;
select count(*) numuniq_pollinsp from junk0;
drop table junk0;
(Count number of casualty vkeys that Are in vidtbrst)
select count(*) vidtbrst_keep from pollinsp
where civtvkey is not null;

```

(This is to make the inspections by M/Y and also by just Y to join with the so grouped duration data below for the complete data set)

```

select *, month(britdate) mo,year(britdate) ye
from vidtbrst
into temp inspect;

```

(By MY)

```

select
  avstvkey, mo, ye,
  sum(numcases) numcases, sum(reg_hr) reg_hr, sum(res_hr) res_hr,
  sum(boat_hr) boat_hr, sum(air_hr) air_hr,
  sum(admin_hr) admin_hr, sum(travel_hr) travel_hr, sum(other_hr) other_hr,
  sum(avst_def) avst_def, sum(avst_act) avst_act,
  (Level II and III Dummies from Mike based on Peggy Thurber's mapping
   Here only II.B activities since only PS activities)
  sum(numd2b1) numd2b1, sum(numd2b2) numd2b2, sum(numd2b3) numd2b3,
  (Note that 35, 36, and 38 for US Flag only needed, but am including it here)
  sum(numd31) numd31, sum(numd32) numd32, sum(numd33) numd33, sum(numd34) numd34,
  sum(numd35) numd35, sum(numd36) numd36, sum(numd37) numd37, sum(numd38) numd38,
  sum(numd39) numd39
from inspect
group by avstvkey, mo, ye
into temp inspect_MY;

```

(By Y)

```

select
  avstvkey, ye,
  sum(numcases) numcases, sum(reg_hr) reg_hr, sum(res_hr) res_hr,
  sum(boat_hr) boat_hr, sum(air_hr) air_hr,
  sum(admin_hr) admin_hr, sum(travel_hr) travel_hr, sum(other_hr) other_hr,
  sum(avst_def) avst_def, sum(avst_act) avst_act,
  (Level II and III Dummies from Mike based on Peggy Thurber's mapping
   Here only II.B activities since only PS activities)
  sum(numd2b1) numd2b1, sum(numd2b2) numd2b2, sum(numd2b3) numd2b3,
  (Note that 35, 36, and 38 for US Flag only needed, but am including it here)
  sum(numd31) numd31, sum(numd32) numd32, sum(numd33) numd33, sum(numd34) numd34,
  sum(numd35) numd35, sum(numd36) numd36, sum(numd37) numd37, sum(numd38) numd38,
  sum(numd39) numd39
from inspect
group by avstvkey, ye
into temp inspect_Y;

```

(Make a table grouped Just by avstvkey for vessel characteristics)



```

select avstvkey
from vidtbrst
group by avstvkey
into temp justvkey;
select count(*) num_justvkey from justvkey;

select
  justvkey.avstvkey,
  vidt.service vidtservice, vidt.flag vidtflag, vidt.reg_gt reg_gt,
  year(vidt.bld_dt) yearbld, vidt.route route,
  (These have many nulls and are used only for model of inspection if adequate)
  vidt.dblside_typ, vidt.dblbott_typ, vidt.prop_typ, vidt.design, vidt.hull_mat
from justvkey, vidt
where
  justvkey.avstvkey=vidt.vkey and
  (
    (vidt.flag="US" and (
      vidt.service="FREIGHT SHIP" or vidt.service="PUB. TANKSHIP/BARGE" or
      vidt.service="TANK SHIP" or ((vidt.service="PASSENGER" or
      vidt.service="PASSENGER SHIP") and vidt.reg_gt>=100) ) )
    or
    (vidt.flag not in ("US") and (
      vidt.service="FREIGHT SHIP" or vidt.service="PUB. TANKSHIP/BARGE" or
      vidt.service="TANK SHIP" or vidt.service="PASSENGER" or
      vidt.service="PASSENGER SHIP" ) )
  )
into temp vesschar;
select count(*) num_vesschar from vesschar;

```

{II. Here we compute Duration, and get rid of duplicate values.  
 We Group by Month/Year of BRIT inspection. This is since several Level II activities may be grouped in a bunch but on several different days. We would like to count this bunch only once. There is still an approximation since bunch may overlap between two months. Can't prevent this in SQL Hence we do two data sets:  
 (i) Group by Month/Year, as described above, and  
 (ii) Group by just Year. This is a smaller dataset, and is the correct one for Level II activities that are performed over 1 or 2 years}

{Note: for inspections with no casualty, duration=(1/1/95 - britdate)}

```

(Data set 1: Group by Month/Year)
select      avstvkey, month(britdate) mo, year(britdate) ye,
            (cirtdate-britdate) dur_cas, ("1/1/95"-britdate) dur_nocas
from pollinsp
into temp dur1;

```

```

select avstvkey,mo,ye,min(dur_cas) mindur_cas,max(dur_nocas) dur_nocas
from dur1
group by avstvkey, mo,ye
order by avstvkey,ye,mo
into temp dur2;
select count(*) all_rows_MY_1 from dur2;
select * from dur2 where mindur_cas is not null into temp junk1;
select count(*) with_casualty_MY_1 from junk1;
drop table junk1;

```

```

(Join duration and inspection tables)
select      inspect_MY.*, mindur_cas, dur_nocas,
            vidtservice, vidtflag, reg_gt, yearbld, route,

```

```

    dblside_typ, dblbott_typ, prop_typ, design, hull_mat
from inspect_MY, dur2, vesschar
where      inspect_MY.avstvkey=dur2.avstvkey and
          inspect_MY.avstvkey=vesschar.avstvkey and
          inspect_MY.mo=dur2.mo and
          inspect_MY.ye=dur2.ye
order by avstvkey,ye,mo
into temp dur3;
select count(*) all_rows_MY_2 from dur3;
select * from dur3 where mindur_cas is not null into temp junk1;
select count(*) with_casualty_MY_2 from junk1;
drop table junk1;

unload to '/nfs/ttd32/optical/50b/trix.dat/dur_2b_my.pollall' delimiter ","
select *
from dur3;

{Check the aggregation}
select      sum(numcases) numcases,sum(reg_hr) tot_reg,sum(res_hr) tot_res,
          sum(admin_hr) tot_admin
from dur3;
select count(*) numrows, sum(numd2b1) numd2b1,sum(numd2b2) numd2b2,
          sum(numd2b3) numd2b3
from dur3;

drop table dur1;
drop table dur2;
drop table dur3;

{Data set 2: Group by just Year}
select      avstvkey, month(britdate) mo,year(britdate) ye,
          (cirtdate-britdate) dur_cas, ("1/1/95"-britdate) dur_nocas
from pollinsp
into temp dur1;

select avstvkey,ye,min(dur_cas) mindur_cas,max(dur_nocas) dur_nocas
from dur1
group by avstvkey,ye
order by avstvkey,ye
into temp dur2;
select count(*) all_rows_Y_1 from dur2;
select * from dur2 where mindur_cas is not null into temp junk1;
select count(*) with_casualty_Y_1 from junk1;
drop table junk1;

{Join duration and inspection tables}
select      inspect_Y.*, mindur_cas, dur_nocas,
          vidtservice, vidtflag, reg_gt, yearbld, route,
          dblside_typ, dblbott_typ, prop_typ, design, hull_mat
from inspect_Y, dur2, vesschar
where      inspect_Y.avstvkey=dur2.avstvkey and
          inspect_Y.avstvkey=vesschar.avstvkey and
          inspect_Y.ye=dur2.ye
order by avstvkey,ye
into temp dur3;
select count(*) all_rows_Y_2 from dur3;
select * from dur3 where mindur_cas is not null into temp junk1;
select count(*) with_casualty_Y_2 from junk1;
drop table junk1;

```

```

unload to "/nfs/ttd32/optical/50b/trix.dat/dur_2b_y.pollall" delimiter ","
select *
from dur3;

select      sum(numcases) numcases, sum(reg_hr) tot_reg, sum(res_hr) tot_res,
            sum(admin_hr) tot_admin
from dur3;
select count(*) numrows, sum(numd2b1) numd2b1, sum(numd2b2) numd2b2,
            sum(numd2b3) numd2b3
from dur3;

(print this out for var names to an output file since need also to print for
pollution data set)
output to /users/gawande/dur_b_poll.out
select *
from dur3
where reg_gt>100000;

```

## Appendix C: Mapping Of CASMAIN and MINMOD Casual Keywords to Level III Intervention Activities

Casualty casual information in the CASMAIN and MINMOD portions of MSMS are grouped by Level III Inspection and Boarding activities to provide a basis for calculating the importance of the Level III activities in the risk based ranking method for Level III MOEs. Discussions with USCG Marine Investigation personnel indicate that there is a substantial difference in the manner in which casualty casual information is recorded between CASMAIN and MSMS. CASMAIN contains 90 keywords under the element name **NATURE OF CASUALTY**. There are 108 keywords under the element name **CAUSE OF CASUALTY**. MINMOD has only 16 keywords under the element name **TYPE** that are analogous to the **NATURE** and **CAUSE** keywords of CASMAIN. Marine Investigation Personnel advised that the information stored in such tables as the Casualty Casual Factor Record (CCFT), Casualty Collision and Grounding Record Table, Casualty Fire and Explosion Record (CFET), Casualty Flood and Capsizing Record (CFCT), and the Casualty Structural Failure Record (CSFT) was not analogous to the **NATURE** and **CAUSE** data in CASMAIN.

The structure of CASMAIN is such that a **NATURE** keyword can have up to three **CAUSE** keywords linked to it. The information at both levels is useful in linking casualty data to specific Level III inspection activities. However, many of the keywords could not be linked to the Level III activities. Of the 90 keywords under **NATURE**, 58 could be identified as relevant to the Level III activities. For the **CAUSE** keywords, only 3 out of 108 could be identified as useful. The results for the CASMAIN keywords are summarized below.

Level III Inspection/Boarding Activity		Number Of Relevant CASMAIN NATURE and CAUSE Keywords
1)	Cargo/Poll. Handling/Pollution Control	2
2)	Steering/Navigation	6
3)	Document/Paperwork	1
4)	Drills/Human Factors	2
5)	Auxiliary Systems (U.S. Flag Only)	5
6)	Power Plant (U.S. Flag Only)	17
7)	Fire Fighting And Prevention	25

- |    |                       |   |
|----|-----------------------|---|
| 8) | Hull (U.S. Flag Only) | 2 |
| 9) | Life Saving           | 1 |

The MINMOD TYPE keywords in CERT where match to the Level III inspection activities as follows:

Level III Inspection/Boarding Activity		Casualty Event Record Table Type Keyword
1)	Cargo/Poll. Handling/Pollution Control	POLLUTION
2)	Steering/Navigation	ALLISION GROUNDING ACC LOSS VES CNTRL
3)	Document/Paperwork	No Keyword Identified
4)	Drills/Human Factors	PERSONNEL CAS
5)	Auxiliary Systems (U.S. Flag Only)	No Keyword Identified
6)	Power Plant (U.S. Flag Only)	LOSS ELEC POWER
7)	Fire Fighting And Prevention	FIRE
8)	Hull (U.S. Flag Only)	SINK FLOODING STRUCTURAL FAIL
9)	Life Saving	No Keyword Identified

As shown above, three Level III inspection/boarding activities are not matched to any of the CERT TYPE keywords. Three of the 16 keywords were not matched to any inspection/boarding activity; REMOVED, LEFT BLANK, and ABANDONMENT.

## Appendix D: Mapping from CRST/BRST Inspection Types into Level II and Level III Activities

### Note:

1. For many inspection types, the mapping is one-to-many.
2. A.x.y denotes that the inspection type maps into Level II activity A.x, and Level III activity y. Similarly for B.x.y. Where there is no Level III activity indicator, e.g. A.x, this implies that *all* 9 Level III activities map into that inspection type. In the absence of any other information, we attribute 1/9 of the total hours to each Level III activity. Hours are similarly equally proportioned wherever there is a one-to-many mapping into Level III activities. Inspection types for which there is no activity listed are not mapped at all. See Section I for definition of Level II and Level III activities.
3. Number in parenthesis indicates the number of records in CRST (both MI and PS cases) containing that inspection type.
4. This mapping is used for Duration analysis of Level II.B activities and the Poisson analysis of Level III activities (U.S. flag only). For Level II.A activities, indicators in IRT are used to select relevant inspections.

<u>Inspection Type</u>	<u>Level II and III Activities</u>	
OTHER (81267)		
NAT. Cargo/Poll. BUREAU (2035)		
ANNUAL EXAMINATION (39232)		B.1, B.2, B.3
POLL PREV (50316)	A.1.1, A.2.1;	B.1.1, B.2.1, B.3.1
LOADLINE (17773)	A.1.8, A.2.8, A.3.8;	B.1.(3,8), B.2.(3,8), B.3.(3,8)
PASS FRGT (12733)		B.1
NAV SAFETY (46235)	A.1.2, A.2.2,	B.1.2, B.2.2, B.3.2
REINSPECTION (38653)	A.2	
MARPOL REQ (30123)	A.1.1, A.2.1;	B.1.y, B.2.y, B.3.y, y=1-4,7
Cargo/Poll. MON (34409)		
ADMIN (78209)	A.1, A.2, A.3;	B.1.y B.2.y, B.3.y, y=1-4,7,9
MONITOR Cargo/Poll. (52630)		
Cargo/Poll. VENT (12720)	A.1.1, A.2.1, A.3.8;	B.2.1
Cargo/Poll. SUP (2108)		
Cargo/Poll. HAND (139)		
MANNING (16424)	A.1.3, A.2.3	B.1.3, B.2.3, B.3.3
Cargo/Poll. PIPE (10915)	A.1.1, A.2.1,	B.1.1, B.2.1
FIRE PROT (31984)	A.1.7, A.2.7;	B.1.7, B.2.7, B.3.7
SIV BOARDING (4092)		
HULL EXAM (37023)	A.3	
TANK VESS (8062)		B.2
DISCREPANCY FOLLOWUP (8939)		B.1.y, B.2.y, B.3.y, y=1-4,7,9
DD EXTEND (2821)	A.3.8	
COC (9379)		B.2
Cargo/Poll. SUPERVISION (2712)		
CONTROL VERIF (1448)		B.3

SOL TRANS (1630)		
PERM-PROCEED (891)		
BREAK BULK (1682)		
DEFICIENCY CK (33238)	A.1, A.2, A.3.(3,8)	
MOVE CONT (711)		
OCEAN DUMP (78)		
CERTIFICATION (44631)	A.1	
LIQ TRANS (92)		
LIFERAFT SVC (21374)	A.1.9, A.2.9	
UNINSP OTHER (266)		
UNINSP VES (3409)		
INVESTIGATION (7106)		
IGS (1111)	A.1.1, A.2.1	B.2.1
MARPOL EQU (164)	A.1.1, A.2.1,	B.1.(1,3), B.2.(1,3), B.3.(1,3)
MARPOLII SURV (2164)	A.1.1, A.2.1	B.2.1
REPAIRS (6443)		
MARPOL (573)		B.2
MARPOL DIS (394)		B.1.1, B.2.1, B.3.1
REC BOAT SAF (9648)		
(42364)		
DAMAGE SURVEY (5470)	A.3.8	
INITIAL CERT (3003)	A.1	
L/S SVC OTHER (2823)	A.1.9, A.2.9	
MACHINERY (617)	A.1.y, A.2.y, A.3.5, y=1,2,5-7	
PERS-IN-ADD (19)		
CONSTRUCTION (1063)	A.1.8, A.3.8	
EXCURS PERMIT (529)		
WELDER QUAL (847)		
UNINSP FISHG (6654)		
PLANREV TBOAT (1595)		
OVERSIGHT (239)	A.1	
POLLUTION INVEST (41763)		
CASUALTY INVEST (41763)		
TRAVEL (45258)		
TRAINING (45258)		
MARPOLII TEST (18)	A.2.1;	B.1.1, B.2.1, B.3.1
MON BARGE OIL (8354)		
DRY BULK INSP (587)		
ANNUAL (9240)		
PUMP ROOM (722)	A.1.(1,5), A.2.(1,5), A.3.8	
CONSTRUCT O/S (50)	A.1.8	
OP MAN REVIEW (4531)	A.1.1, A.2.1;	B.1.1, B.2.1
ANNUAL CONTAI (436)		B.1
MARPOL II (193)		B.1.(1,3), B.2.(1,3), B.3.(1,3)
ANNUAL FREIGH (9031)		B.1
UNINSP TOWING (44)		
NLS SURVEY (171)	A.1, A.2;	B.2
MARPOL V (9215)	A.A.1, A.2.1;	B.1.(1-3), B.2.(1-3), B.3.(1-3)
HARBOR N-TARG (6562)		
OTHER GOVT (26)		

HARBOR TARGET (14045)		
EQUIP MAINTEN (7679)		
MSIS DATA ENT (15684)		
REQD CG TRAIN (4394)		
INCL EXP (511)	A.1.8	
LIFE JACKET (15)	A.1.9, A.2.9;	B.1.9, B.2.9, B.3.9
ENFORCE L & T (528)		
SECURITY BOARDING (30)		
INV NEC (5545)		
HOT WORKS ANN (1463)		
HOTLINE (7)		
SPOT CHECK (460)		
LIQ BULK INSP (5860)		
MARPOL GEN (3762)		B.1.(1-3), B.2.(1-3), B.3.(1-3)
REFLAGGING (37)	A.1	
MARPOLII PR (6)		
VSL MOVE CTRL (4505)		
PROG SUPPORT (3964)		
ORG. PROJECTS (3910)		
UNIT ADMIN (15039)		
PROG TRAINING (3847)		
DOCUMENT CHEC (8565)		B.1.3, B.2.3, B.3.3
FIREFIGHTING (1997)	A.1.7, A.2.7;	B.1.7, B.2.7, B.3.7
COW (204)	A.1.1, A.2.1;	B.2.1
PERS EVALS (3405)		
PUBLIC RELATE (4012)		
OCC SAFETY (2253)		
INDUST COORD (2892)		
PUBLIC MEET (2047)		
GENERAL CORRS (5052)		
WS SYS MAINTEN (3505)		
SEM/CONF (1998)		
WATCH-OFFICE (9887)		
WATCH ON CALL (10388)		
MON PK HAZMAT (1286)		
CG VESSEL/EQP (2)		
TRN FORMAL (5076)		
ANNUAL SHIP (1662)		
LIAISON (3054)		
MON BARGE DC (2466)		
TRAIN ON JOB (8010)		
MON SHIP OIL (2961)		
MILITARY EXPL (471)		
POL PREV EQP (7057)	A.1.1, A.2.1;	B.1.1, B.2.1, B.3.1
SANITARY INSP (32)	A.1.5, A.2.5	
DWT SURVEY (95)	A.1.8	
INV UNUSUAL (1289)		
MON HAZ GAS (657)		
REGATTA/PARAD (566)		
D Cargo/Poll. PERMI (263)		



DISCREP FLWUP (3989)  
 MON NEC OPS (8142)  
 SAR ACTIVITY (246)  
 LESSON PREP (2618)  
 FIRE PROTECTN (10)  
 ANNUAL FREIGH ON (7)  
 SURVEILLANCE (353)  
 CONTIN DRILL (1021)  
 DISCREP FLWUP OWUP (1)  
 PERS ACTIONS (3263)  
 AUX SUPPORT (997)  
 FOIA REQUESTS (1755)  
 AMVER (4120)  
 AIDS TO NAV (325)  
 SAFETY EQ MAI (1343)  
 COTP ORDERS (1385)  
 FIELD REGS (1019)  
 COMMERCI EXPL (1118)  
 SIV SURVEIL (54)  
 RESPONSE PLAN (1180)  
 OCEAN DUMPING (94)  
 SAFETY ZONE (1175)  
 REC BOAT SAFE (1187)  
 MON SHIP DC (724)  
 BRIDGE ADMIN (280)  
 FIRE ASSISTAN (64)  
 OTH CG VSL HR (664)  
 HOT WORKS TEM (425)  
 EST SAFETY ZO (947)  
 MARPOL I (1212)  
 LIQ BULK SURV (560)  
 ADMIN ORDER (398)  
 CONTIN PLAN (2954)  
 MOBILIZ EXER (293)  
 MOBILIZ PLAN (606)  
 ANNUAL PASSEN (109)  
 VSL ESCORTS (225)  
 CREW LIC. CHK (3629)  
 CONTAIN INSP (1054)  
 COA MARPOL I (713)  
 COA MARPOL V (779)  
 PACK HAZMAT (572)  
 DRY BULK SURV (135)  
 HOT WORKS DAY (292)  
 MON OFFSHOR L (20)  
 PORT SEC CARD (54)  
 EST SEC ZONE (186)  
 MON BLAST/OX (130)  
 SECURITY ZONE (340)  
 MON INSHORE L (45)

B.1.y, B.2.y, B.3.y, y=1-4,7,9

A.1.7, A.2.7, A.3.7;B.1.7, B.2.7, B.3.7

B.1

B.1.(1,3),B.2.(1,3),B.3.(1,3)

B.3

A.1.3, A.2.3,

B.1.3, B.2.3, B.3.3

INV BARGE (61)  
RESEARCH (3495)  
HEARING (3495)  
PK HAZMAT SUR (40)  
COA MARPOL II (102)  
ANNUAL BARGE (22)  
RADIOACTIVE (12)  
PASSENGER SUR (19)  
COMPLAINT BRG (1)  
BLST WTR EXAM (14)

## APPENDIX E: A Goal Programming Formulation for Resource Allocation Using MOEs

Let  $X_{ijk}$  be person hours of resource type  $i \in I$  for  $MSO_j$  in time period  $k$ , then constraints on resource at  $MSO_j$  are

$$\sum_i \sum_j \sum_k X_{ijk} \leq M, \text{ total available resources}$$

$$\sum_j \sum_k X_{jk} \leq N^I, \text{ total available resources of type } I, \text{ and}$$

$$S_u^j \geq \sum_i \sum_k X_{ik} \geq S_L^j, \text{ where}$$

$S_u^j, S_L^j$  are the upper and lower bounds on resources at  $MSO_j$ .

The foregoing formalizes the "supply" of resources.

Let  $D_{jk}^T$  be the demand for activities (e.g., inspectors) type  $T$  at  $MSO_j$  in time period  $k$  (based upon traffic, USCG regulations and recommended procedures), and can be converted into number of persons for type  $i$  resources. We now need to bundle  $X_{ijk}$  in type  $T$  activities to meet demand by  $MSO$  and time period (for example, winter on the East Coast may require different resources than the other seasons) as follows.

$$D_{jk}^T \geq \sum_i X_{ijk}^T \text{ where } X_{ijk}^T \text{ is the bundle of person hours of resource } i \text{'s needed for an activity } T$$

(such as a hull inspector) at  $MSO_j$  for time period  $k$ . Note that this formulation assumes  $X_{ijk}^T$  are continuous variables  $\geq 0$ ; appropriate integer (0,1) variables may be needed for precision.

In this formulation, we consider the multiple objective case, where for example, our criterion would be expected number of deaths, injuries, and pollution incidents. We further assume that the objectives can be expressed as goals or targets for a specified time period, e.g., one budget cycle, or 5-year planning horizon. Measuring achievement of the objective are the measures of effectiveness.

Let  $Y_{jk}^n = f(\sum_i X_{ijk})$  where  $Y_{jk}^n$  is the effectiveness measure for the  $n$ th objective (if deaths,

injuries and pollution incidents were the criterion,  $n = 1, 2, 3$ ) for  $MSO_j$  for time period  $k$ , and  $A_j^n$  be the goal or target for this planning period for objective  $n$  and  $MSO_j$ .

We would like  $\sum_k Y_{jk}^n = A_j^n$  but realize that this result, i.e., everything matching perfectly, is at best a goal in and of itself. Therefore, we let  $A_j^n$  be a goal and permit over and underachievement of the goal by employing deviation variables and using the general formulation

$$\min Z = \sum_{n=1}^m W_n Y_n,$$

where  $Y_i = f(d_i^+, d_i^-)$ ,  $d_i^+$ ,  $d_i^-$  are the deviations above and below a particular goal, in our case,  $A_j^n$ , and  $W_i$  provide the capability to weight over and under deviation from the goal differently, as well as, the use of preemptive weights to ensure achievement of specified goals.

The formulation can make use of existing linear programming codes (assuming  $X_{ijk}^j$  are continuous variables and  $f(d_i^+, d_i^-)$  is piece-wise linear). This capability permits human judgement and experience to be used in examining effectiveness measures and the establishment of activity levels at MSOs. Appropriate tradeoffs can be made at two levels: (1) among the set of effectiveness measures; and (2) within effectiveness measures while allowing for the multiobjective nature of the resource allocation process. This permits a flexible determination of weights. A starting point would be to use risk rankings by port, as determined in Section 3.

## APPENDIX F: Mathematical Discussion of Resource Allocation

From the econometric models, we can estimate

$f(p, t) =$  expected number of casualties resulting from inspection resources  $p$  invested in inspecting traffic mix  $\bar{t} = (t_1, \dots, t_m)$  [where  $t_i$  are number of vessels of characteristic  $i$ ]

Note  $f(p, t)$  is convex in  $p$ ; i.e.

$\frac{\partial f}{\partial p}$  is monotonically decreasing.

Given an annual traffic forecast for vessels arriving at MSO  $k$ ,  $T_k$ , the expected number of casualties, if  $p_k$  inspectors are assigned, will be

$$c_k(p_k) = f(p_k, T_k).$$

Assume we have inspection resources  $P$  to allocate across MSOs. Follow the procedure:

1. From  $P$ , allocate one unit to MSO  $x$ , where  $x$  is the MSO with maximum marginal benefit; i.e.

$$\left. \frac{\partial c_x}{\partial p} \right|_{p_x} = \text{Max}_y \left. \frac{\partial c_y}{\partial p} \right|_{p_y}$$

2. Update  $p_x$  with this additional unit.

This will result in a decline in  $\left. \frac{\partial c_x}{\partial p} \right|_{p_x}$ .

3. Return to step 1 until  $P$  is exhausted; i.e.  $\sum_i p_i = P$ .

If certain MSOs have more fragile environmental harbors, a weight  $W_k$  can be assigned so that

$$W_k \left. \frac{\partial c_k}{\partial p} \right|_{p_k} \text{ is compared, rather than } \left. \frac{\partial c_k}{\partial p} \right|_{p_k}.$$